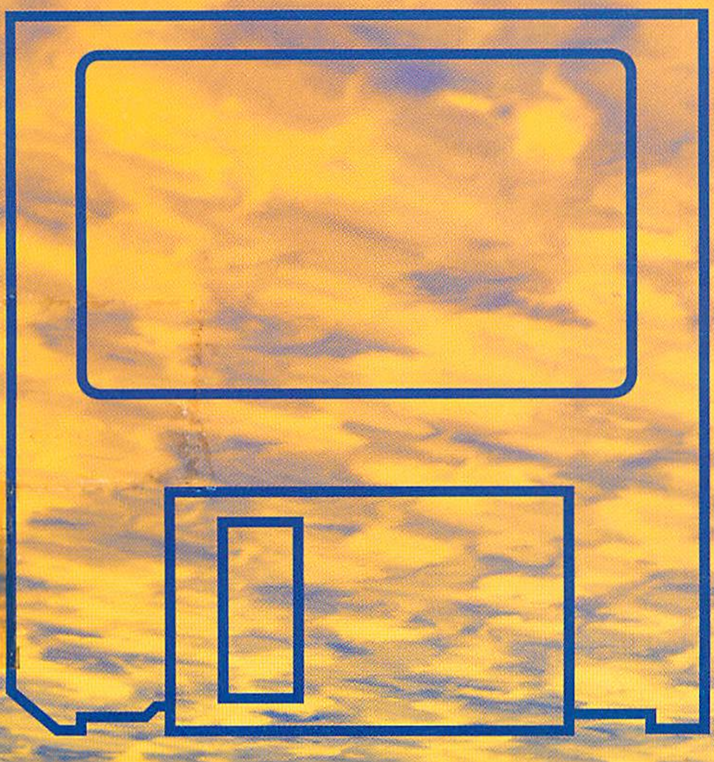
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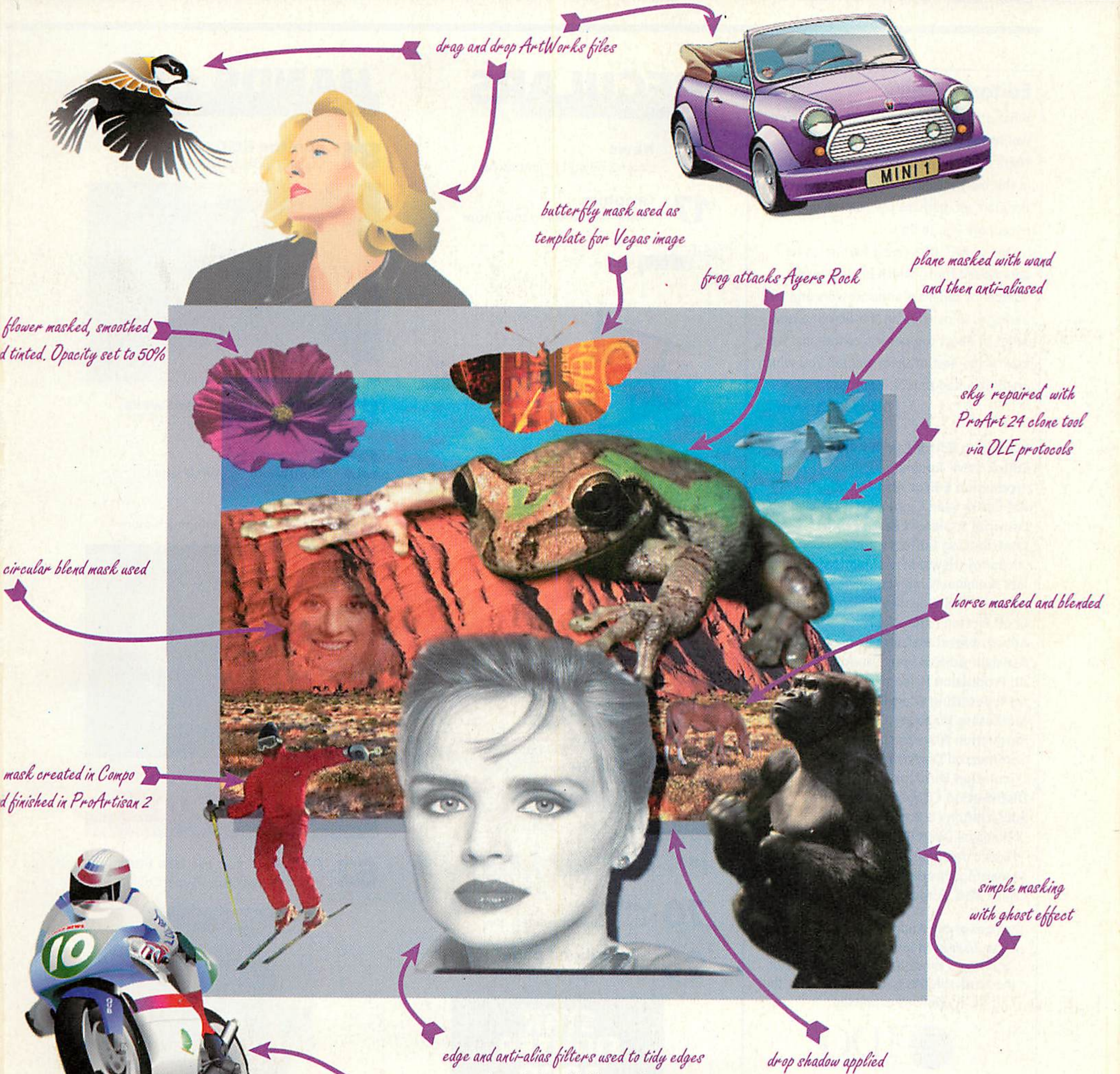
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Editor's letter

What other computer company but Acorn would start its own enthusiasts' scheme? There's certainly no shortage of enthusiasm in this market and, if you haven't joined the Clan yet, perhaps our feature will encourage you to do so.

One of RISC OS's finest features is its anti-aliased fonts, which have helped a number of superb wordprocessors and DTP packages to develop. In the first of a new series of direct comparison round-ups, we look at the best of them and tell you which are best suited to which purpose.

David Matthewman

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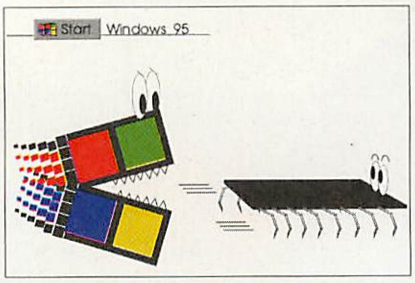
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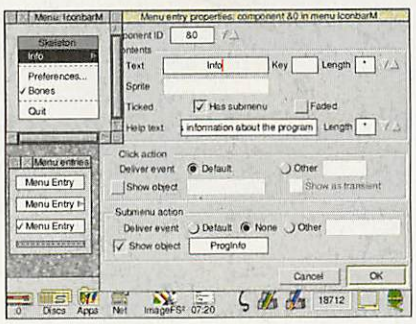
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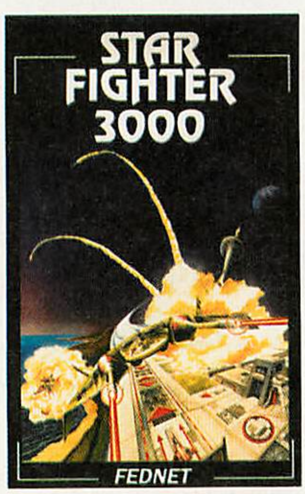
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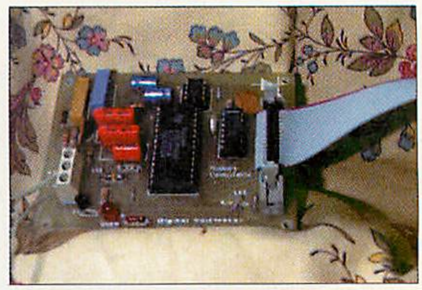
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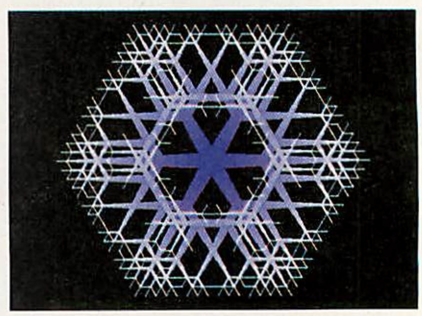






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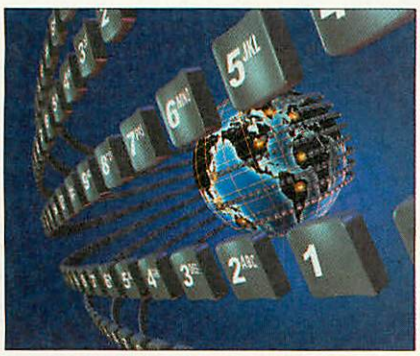


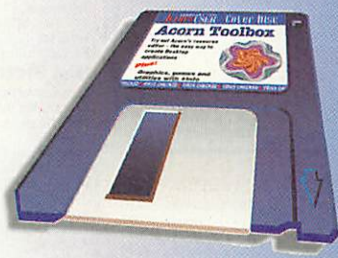
February 1996

REVIEWS



FEATURES







Next month in Acorn User

Graphics issue

The heavyweight bitmap graphics packages battle it out. Which will come out on top, or will they all be useful for different purposes? We have a detailed report on the recently-released video editing software, and a round-up of colour ink-jet printers.

Baffled by the secrets of your hard disc? Ever had a corrupted free space map? Then read our article on hard disc formats, and how to fix the when they go wrong. All this and an in-depth report on Acorn's revelations at BETT in the next issue of *Acorn User.*

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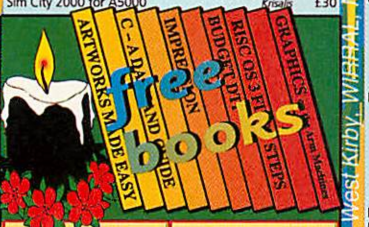
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Placard	*ICS*	£10
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Playdays, age 3-8	*SkillsW*	£21
Playground, KS1	*Topolog*	£21
Plot	*Clares*	£63
Podd, KS1,2	*ESM*	£29

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Populous	Krisalis	£23
Prehistoric Animals	Micro S	£16
Primary Teachers Clip Art Starter Set	DEC_dATA	£13
PrimeSolver Full version, KS1-4	Minerva	£49
Printer SCSI	Atomwide	POA
ProArtisan 24 (Risc PC only)	Clares	£125
ProCAD, KS4	Minerva	£450
Prophet 2	Apricote	£143
PublishArt Release 2, Artworks format	Smart	£29
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Puddle, KS1	Topolog	£17
Quest for Gold	Krisalis	£19
QuicKey	ICS	**£10**
Rainbow, KS1,2	Longman	£30
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Resultz	Colton	£75
Revelation ImagePro 24 bit limited offer, KS2-4	Longman	**£39**
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Rhapsody 3	Clares	£74
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RISC OS 3 First Steps	Dabs	V0£7
RISC OS 3 Programmer's Reference Manual vol 1-4	Acorn	V0£105
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Rosie and Jim: Duck loses his Quack, age 3-6	Sherston	**£10**
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Schema 2	Clares	£95
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Sea Rescue, age 7-9	Sherston	£25
Search and Rescue, age 9+	Storm	£26
Seashore Guide	Micro S	£16
Seelinks - Ourselves, KS1,2	ESM	£30
Serenade	Clares	£75
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smArt Fantasy	4Mation	£15
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Somerset Talking Computer Project Learning Materials	Longman	V0£30
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Special	ICS	£10
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Product	Publisher	Price
A305/310/440 1 - 4 Mb	IFEL	£118
A3000 1 - 2 Mb, Upgradable	IFEL	£52
A3000 1 - 4 Mb	IFEL	£99
A3010 1 - 2 Mb	IFEL	£38
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A3010 2 - 4 Mb	IFEL	£83
A3020 / A4000 2 - 4 Mb	IFEL	£74
A5000 2 - 4 Mb	IFEL	£75



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Product	Publisher	Price
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Risc PC700 10M HD850 17" Monitor	Acorn	£2015
Risc PC700 10M HD850CD 14" Monitor	Acorn	£1799
Risc PC700 10M HD850CD 17" Monitor	Acorn	£2125
Risc PC700 5M HD425 14" Monitor	Acorn	£1359
Risc PC700 5M HD425CD 14" Monitor	Acorn	£1469
Cx 5x86-100 PC Card	Aleph	**£545**
Case Mid Upgrade for Risc PC 600 2M and 5M	Acorn	£105
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Hard Disc Fitting Kit for Risc PC 5¼" bay	ICS	£20
IDE Internal Interface for Risc PC	ICS	£60
IDE Removable Hard Disc Kit for Risc PC, 270 Mb	ICS	£359
Removable Hard Disc Fitting Kit for Risc PC 5¼" bay	ICS	£20
Risc PC 2 Mb VRAM	Acorn	£195
Risc PC Sound Card	Acorn	£58
Risc PC x86 Card S (DX2-66)	Acorn	£248
Risc PC x86 Card S (DX4-100)	Acorn	£298
SIMM 16 Mb 32 bit		£345
SIMM 4 Mb 32 bit		£110
SIMM 8 Mb 32 bit (IFEL)	IFEL	£196

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Product	Publisher	Price
A4000 HD210 High-Res SVGA Multiscan System	Acorn	£739
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Please note: **ColourMobile** works on A4, A3010, A3020, A4000, A5000 & RISC PC machines (requires bi-directional parallel port). You must have RISC OS 3.1 or later, a hard disc and 2Mb RAM minimum. All hardware products come with full 1 years guarantee. E & OE.

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News

Acorn workstation to take US?

IN a cagely-worded Stock Exchange announcement on the 10th January, Acorn revealed that they had signed an agreement with Oracle Corp of the US "...for the development of reference designs for a range of network computing products ... based on open network standards such as HTML and Sun's Java ... low-cost as they do not need local mass storage and have minimal RAM requirements."

Before the announcement Acorn's shares had rocketed to 248p purely on rumours that such a deal was in the offing and that Acorn would be producing a cut-price Internet terminal based around the A7000.

As revealed in last month's *Acorn User* Acorn had admitted that it has been talking to Oracle, and other companies of equivalent stature, with regard to adapting Acorn's RISC machines for the Internet.

Speculation had been boosted even further by Acorn's licencing of *Java* the hardware-independent programming language developed by Sun Microsystems for use on the Internet in conjunction with smart world-wide web applications.

As a result of all these interesting speculations Acorn's name had been turning up in some strange places, including the *New York Times*. Just before Christmas a press release was issued from the Prestel Online business information service with the headline *Acorn gets there first* and the quote from Prestel's managing director "...a number of US hardware manufacturers have been racing to produce the first Internet workstation. But a UK company in Cambridge has got there first, astounding the US industry."

The announcement of the deal with Oracle has confirmed that virtually all the speculation was true, although the wording implies that there is no commitment to Acorn hardware or RISC OS. But reading between the lines isn't hard in this case:

The "...development of reference designs..." did not need to be done by Acorn, anyone could have done it, so why Acorn? If you wanted to produce a machine without a hard disc (no "local mass storage") and "minimal RAM requirements" what operating system would you choose? Not a PC (100Mb hard disc and 12Mb RAM minimum), but RISC OS fits those requirements, it's always been in ROM and can run in just 2Mb.

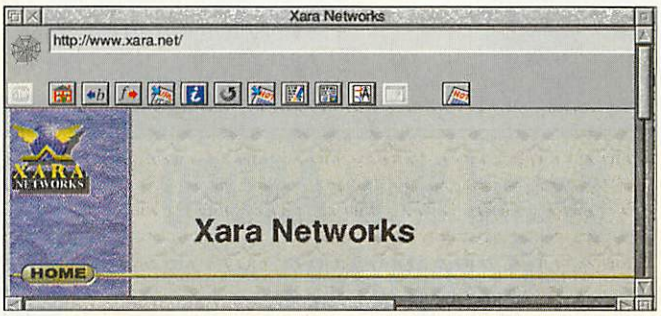
Not only that but Acorn's hardware and software have been in use for years, the Pentium/Windows'95 combination is new and not particularly robust.

The final argument that *strongly implies* Oracle want the hardware and software too is that Online Media's Set-Top Box already supports NTSC, the US TV standard, and if you want a machine that's cheap, it should plug into a TV. Acorn already know how to do that too.

This is fantastic news for Acorn, not because it will sell more Acorn machines (although it will) but because it gives Acorn credibility, and it needs that more than anything else. More detailed information will be available next month.

Xara developments

MEANWHILE, Computer Concepts' sibling companies under the Xara branding have been busy. The licensing deal with Corel Corp., who now markets and manufactures what was *Xara Studio* for Windows and is now *CorelXARA*, is going well. 'It cannot be over-stressed that we have not sold out to Corel,' said Charles Moir. While Corel has exclusive rights to publish and market *CorelXARA*, Xara still owns the code and can adapt key software components for other non Corel-related projects. So CC and Xara aren't closing down and retiring to oblivion with a sack full of Corel dough.



Xara Networks is Charles Moir's latest venture.

In fact, a fair chunk of the cash generated by the Corel deal is being ploughed back into the latest Xara project – Xara Networks, the new business which has lured *Acorn User's* editor, David Matthewman to a new career. Xara Networks is a new Internet service provision for businesses and other Internet access re-sellers. Unlike many other smaller Internet service provides who offer dial-up connections and actually re-sell Internet access from a small number of larger Internet service providers, Xara Networks is concentrating on fixed line connection customers only. No dial up services, even using ISDN, are available from Xara Networks.

Instead business with their own servers and networks plus other Internet service providers are Xara's target. While dial-up services can be obtained for as little as £7 a month, a fixed 64K bits/sec Xara Networks link will cost up to £10,000 a year, so there has to be some special appeal at the Xara end of things. To this aim, Xara has invested in its own multi-megabit Internet pipe into the US via the London Internet Exchange or LINX.

To round off this months' CC family news, Charles Moir conceded to *Acorn User* that it was now unlikely that there would be any major new hardware products from the Wild Vision subsidiary for the Acorn market. Peter Wild is apparently concentrating on hardware design and development for third party companies, though the Acorn link remains as much of that work is for Online Media.

Computer Concepts
Tel: (01442) 351000
Fax: (01442) 351010
E-mail: sales@cconcepts.co.uk

Minerva loses Pat Cleaver

PAT CLEAVER, Minerva Software's sales and marketing manager, is leaving the company she has worked at for nearly ten years. Featured in The Moxon Interview back in September last year, Pat has taken the hard decision to leave Minerva because a development in her partner's career will mean moving away from the Exeter area, where Minerva is based.

A popular figure in the Acorn community, Pat's last public appearance for Minerva was at BETT in January. We certainly didn't want to see her go,' said Nova Fisher, Minerva's managing director.

Zynet, the Internet service provider sister company to Minerva, launched a much expanding service at BETT and it is a shame that Pat has had to leave at such an exciting time for the company. Pat is now looking for a new career near Bristol, where she is now based.

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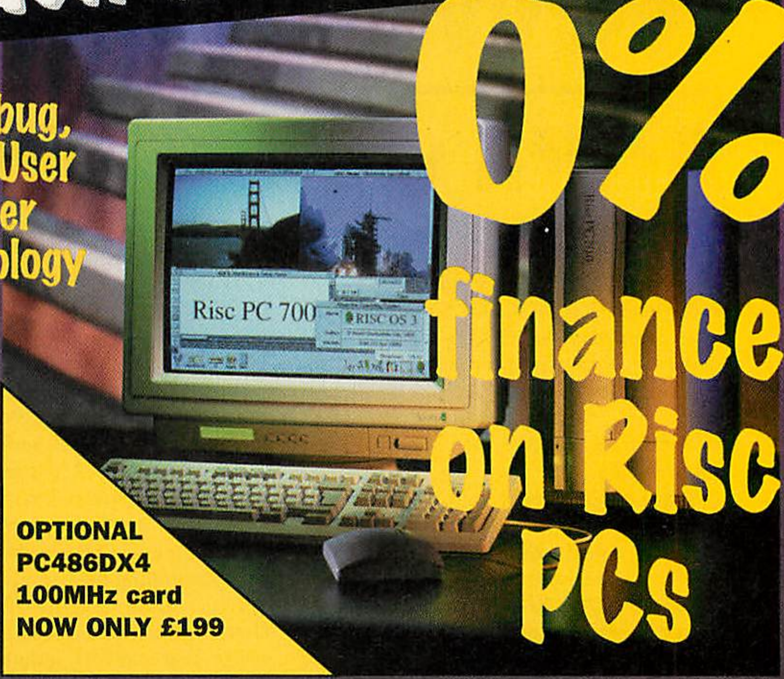
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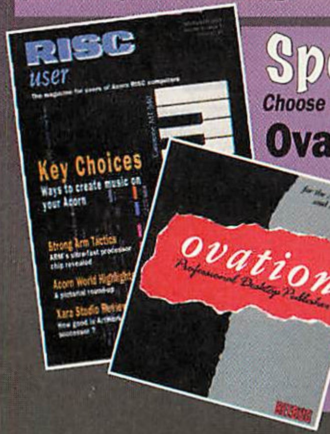
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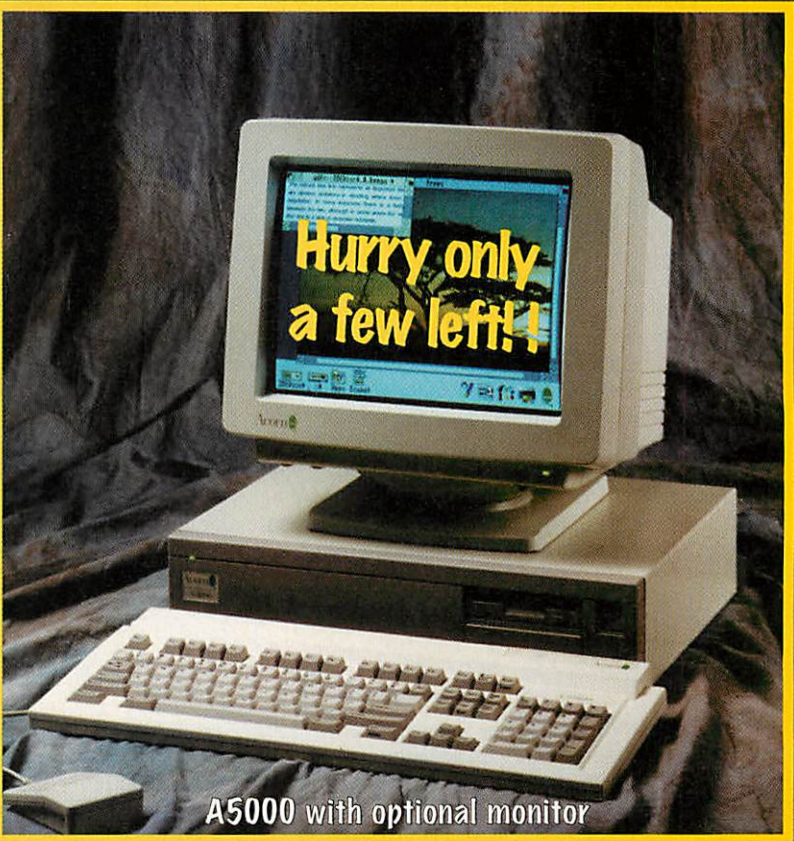
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CompuServe's hand forced

COMPUSERVE, the world's largest independent global on-line service which also offers its members access to the Internet, dropped a Christmas bombshell on the Internet by complying with a request from German authorities to selectively suspend access to around 200 newsgroups on the Internet. The newsgroups in question were selected by the German authorities, who had identified them as containing unlawful material according to German law.

The debate about Internet freedom has been steadily growing for some time. CompuServe was at pains to point out that the suspension was only temporary and that it could not actually alter the contents of the Internet. By suspending access to the newsgroups to its users in Germany, CompuServe had to suspend access to the said newsgroups to all its 4 million or so members around the world, 200,000 of whom are in the UK, as there is currently no way to locally suspend access selectively.

What has all this to do with Acorn? As CompuServe's chairman said recently, a computer not connected to the Information Superhighway is like a television set without sound and colour. Acorn is heavily committed to the Internet, indeed it is a little known fact that Acorn actually has a side line re-selling Internet connections to businesses in Cambridge.

Another factor is that most of Acorn's efforts are focused on schools and, therefore, children, the users most vulnerable to exposure to the less acceptable aspects of the Internet. On the positive side, Acorn's Internet provisions designed for the classroom give the teacher complete control over what his or her pupils can see of the Internet.

For example, a teacher can selectively copy areas of the World Wide Web to a local store which can be browsed by the class as if it was the real thing. Not only is the system morally safe, it keeps the phone bill down too.

The action of the German authorities to force CompuServe into restricting access to the Internet is understandable, but in the end futile unless global policing of the Internet is to be introduced. That would be a controversial happening.

Although CompuServe has temporarily stopped access to the 200 or so newsgroups on its own news server, it is still possible for those determined enough to access the very same newsgroups being served up on other servers elsewhere on the Internet, even using the CompuServe network as an intermediate connection. Plus, although CompuServe a big part of the Internet, most of the other 40 million or so Internet users still have unrestricted access.

CompuServe's forced action just before Christmas demonstrates that the problem of Internet access for minors has to be tackled.

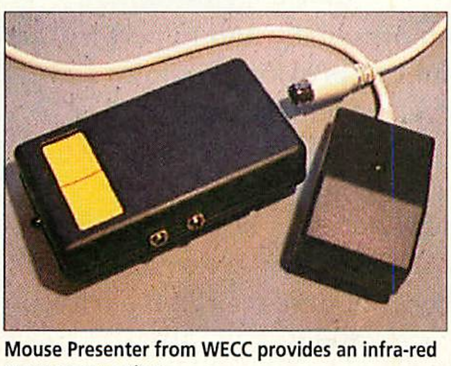
However, perhaps the way Acorn and others are tackling the problem – by giving a responsible adult moderator the key – is better than one day repressing the Internet as a whole.

Mouse Presenter

LEAMINGTON Spa-based WECC has launched an infra-red remote control designed for presentation software like WECC's own *Portfolio* package and others, like *Cable News*. The device, designed by Design IT, is called Mouse Presenter, though it's not actually a mouse replacement and it comes in two parts – a receiver, which can be attached to a convenient location using velcro and a remote handset. The receiver plugs into the computer's mouse socket and the original mouse itself plugs into the receiver box daisy-chain fashion. Switches are provided to enable on or all the original mouse buttons to disabled, apparently useful when the mouse is used by very young children or special needs students.

The Mouse Presenter handset replicates the Select and Adjust buttons, while Acorn computers need three buttons. By default the two buttons work as Select and Adjust mouse buttons, but there is no pointer control or a menu button. Packages like *CableNews* and *Portfolio* don't require a mouse to be operated, though others, like *Magpie* do, so aren't so suitable for Mouse Presenter.

An additional feature in the WECC version of the Mouse Presenter is a pair of switch sockets into which external switches can be attached to operate the select and adjust buttons on the Mouse Presenter handset. Once again, this was added for special needs requirements. Mouse Presenter is priced £79.95 + VAT, or £50 more for the version with the additional switch sockets. The current unit is compatible with all Acorn machines up to the A7000. An A7000 version of the device is in the pipeline.


Mouse Presenter from WECC provides an infra-red mouse connection

WECC
Tel: (01926) 413741

Microsoft money

You probably saw it too, Microsoft's Christmas TV ad campaign for its new range of multimedia 'educational' software, with American speech accents featured free of charge. The chilling fact is that Microsoft probably spent more on that ad-campaign than the entire annual turnover of several of Acorn's valuable third party educational software developers. You could also reasonably estimate that the Microsoft budget for that single campaign was higher than the amassed marketing budget for most of the indigenous educational software industry of the UK. But does that make Microsoft's software any better?

Amusement at Online Media

Acorn's digital interactive multimedia division has joined AMUSE (Advanced Multimedia Services for Residential Users), a consortium of European telecommunications companies and universities whose aim is to undertake extensive trials of digital interactive multimedia services at a number of locations across Europe. AMUSE forms part of the ACTS Programme, which has EC funding for research and development of advanced technologies. Online Media's AMUSE participation is as part of Olivetti Telemedia, which was set up last year to focus on exactly this sort of activity.

Low profile workstation

Premier Developments of Huntingdon have produced a low profile desktop workstation designed for all-in-one computers like the A3000 or A3010/3020. The unit fits over the computer and has a shelf for items like a CD-ROM drive or modem. The top shelf is wide enough to hold a 14 inch monitor plus a pair of loudspeakers. As the design is based on shelving, there is plenty of access to the computer's ports and drives compared to an enclosed design. The unit is priced £40.42 + VAT.

Premier Developments
Tel: (01487) 823684
Fax: (01487) 380838

Busy time for Beebug

ST. ALBANS-BASED Beebug has celebrated a busy end to 1995 and a positive outlook for 1996. Around 2,500 cut-price Acorn A3010s were shifted by Beebug between August and Christmas, according to Beebug's Sheridan Williams. While the A3010 offer is not likely to be repeated, because Acorn has stopped making the A3010, Beebug has obtained a smaller supply of A5000s, which are being offered at attractive prices as well.

At last, *Ovation Pro* should be just about shipping as this issue of *Acorn User* appears and Beebug has opened a premium rate telephone hotline for people needing advice and help with their Risc PC 486 PC Cards. Beebug has also published an Acorn-oriented guide to the Internet.

Of the A3010 offer, Williams told *Acorn User*: 'It shows that there is still plenty of demand for Acorn computers at the right price.' Now Beebug has acquired a hundred or so brand new 25MHz A5000s, fitted with 2Mb of RAM and 80Mb hard drives and is offering them for £480 + VAT, without a monitor. An upgrade to 4Mb is available for an additional £90 + VAT and Beebug can supply monitors too.

If *Ovation Pro's* feature list is anything to go by, *Impression* might finally be surrendering its claim to being the top desktop publishing package for the Acorn platform. Here are a few things *Ovation Pro* can offer over *Impression*: multi-level undo/redo, C-based integrated script language, user-definable button bars, automatic text flow around graphics and correct text flow in irregularly shaped frames.

The initial release of *Ovation Pro* will lack some advertised features, like colour separations and widow/orphan control, but free upgrades to the full version are scheduled for the second quarter of the year. A definitive review of *Ovation Pro* is eagerly awaited. *Ovation Pro* is priced £165 + VAT, existing users can upgrade for £79 + VAT and users of a competitor package can obtain *Ovation Pro* for £89 + VAT.

Beebug is now operating a new 486 PC Card hot-line for Risc PC users. It's available on (0891) 518131 between 10am and 4pm, costs 49p a minute and provides the caller with access to a technical expert on the Acorn family of PC cards for the Risc PC.

ExpLAN & Acorn sponsorship deal

Acorn Education and ExpLAN Computers Ltd have jointly sponsored Tavistock College in Devon. The deal is part of an £800,000 Government program to at the school to create a language college.

In addition to £100,000 of industry sponsorship, the school will receive up to £700,000 of Government funding over three years to develop the school's language college. Part of the plans involve the creation of an International Communications Centre, complete with MPEG video workstations on a high speed ATM network. Sounds familiar? You guessed it, there is a great opportunity for Acorn and Online Media to make inroads to the 1900 pupil school, which currently uses Research Machines Nimbus computers.

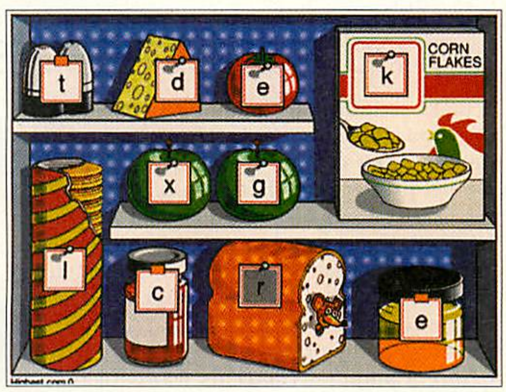
ExpLAN Computers director Paul Richardson commented 'ExpLAN is delighted to be involved with Tavistock College in the development of its language facilities. Our own multi-lingual software has so far been developed in Germany, and we are keen to see the College here expanding its range of languages to include Russian, Japanese and Mandarin, which will become increasingly important in the next decade.'

ExpLAN Computers Ltd
Tel: (01822) 613868
Fax: (01822) 610868
E-mail: postmaster@explan.demon.co.uk

Speedy keys

IF you're not as comfortable with your computer keyboard as you might like to be, Brilliant Computing has a new product to tempt you with. Called *Speedy Keys*, the software is described as a series of games to develop keyboard familiarity. The software was developed with Key Stage 1 users in mind, but is equally suitable for adults. *Speedy Keys* can be used as part of a structured typing course and it can also help improve reading and spelling. A student's progress can be recorded and monitored by a teacher over time. The teacher can also speed up the software and add his or her own texts to the set games. *Speedy Keys* is being jointly marketed by SEMERC and is priced £30 + VAT for a single user and £72 for a site licence.

SEMERC
Tel: 0161-627 4469
Fax: 0161-627 2381



Brilliant Computing's *SpeedyKeys* encourages greater familiarity with the keyboard.

Acorn predicts high-tech future

AT press time it is one week before BETT '96. However, *Acorn User* has learned that Acorn is to make a far-reaching policy initiative at the show, which basically declares where Acorn sees the future of education is going. A display of futuristic education computer solutions will be displayed at the show, finished in eye-catching black. To accompany this, Acorn is publishing a policy document – or 'black paper' – called *No Limits to Learning* which outlines the fine detail of how Acorn sees the use of computer technology in schools will evolve for the rest of the century.

We'll be reporting in detail on Acorn's vision next month, but according to Acorn's education manager, Dick Wallin, we can expect initiatives which focus on new forms of distance learning as the trend to spread education beyond the school gates gathers pace, driven along by communications technology like the Internet. It's already happening in higher education – you can already study for an MBA over the Internet, for example, but Acorn is predicting that the trend will soon encompass secondary and primary sectors.

Pocket Book to mobile phone link



Now your pocket book can talk to your mobile phone – yuppie heaven or what?

PSION has at last released Telenote Link, which enables a Psion Series 3a or Acorn Pocket Book to be connected to a digital mobile phone for messaging purposes. Digital PCN and GSM mobile phone services operated by Vodafone, Cellnet and Orange (Hutchison Telecom) feature a system called SMS (short message service). This enables 160 character messages or 140 byte data packets to be sent via a mobile phone over the mobile digital network to another phone.

A modem is not required. Many PCN and GSM phones can receive and display SMS text messages, though fewer can also send messages. Psion got together with Nokia to develop software which enables messages to be typed conveniently into the Series 3a or compatible – like Psion's Workabout range and the Acorn Pocket Book – and then upload the messages to the phone across a low cost cable via the serial port.

The Telenote Link package starts at just £350, which compares with £500 for a fully-fledged data interface card, though that can send and receive faxes and send data just like a modem. At present the Telenote Link package will only work with Nokia 2110, Philips PR747 and possibly Nokia Orange phones.

Psion PLC
Tel: 0171-262 5580
Fax: 0171-258 7342

Computer Concepts developments

IT looks certain that Computer Concepts is to abandon its famous software protection 'dongle'. The device, which attaches to the parallel printer port, has been one of the less welcome features of *Impression* and *ArtWorks*. Besides the inconvenience of using the dongle, a certain percentage have ended up as faulty returns, leaving the legitimate user temporarily unable to use his or her software. With the market for both of these packages now relatively mature, Computer Concepts wants to reduce prices and the dongle happens to be one of the more expensive production components of an *Impression* or *ArtWorks* package.

At the time of writing, CC's Charles Moir told Acorn User that supplies of dongles were already low and that once the present batch was exhausted, no more replacements would be ordered. Instead, CC is working on removing the dongle code from Impression and *ArtWorks*. Let's hope CC doesn't choose the same dongle-free copy-protection method as in *Impression Style* – this forces the user to re-install *Style* every time the system folder is updated. No prices of dates for revised versions of *Impression* and *ArtWorks* were available as we went to press

Acorn User diary

Empty, isn't it? We're sure that there's actually a lot more going on in the Acorn market than this, so please let us know by writing to *Acorn User* diary at the usual address or by e-mailing audiary@idg.co.uk.

Date	Event	Venue	Contact
7 – 9 Mar	The Education Show	NEC, Birmingham	Ticket Hotline: 0181-984 7711

4Mation's Matson and Souch part

Mike Matson, a name synonymous with the innovative educational software company, 4Mation, has left the company for pastures new. Matson's 4Mation partners, Neil and Jean Souch have taken over Matson's share in the company. Matson explained: 'The sort of projects that I'm now interested in leave little time for anything else. Therefore, Neil and I have amicably decided it would be more appropriate to have my new interests developed outside 4Mation, whose core business remains within the busy world of educational software.'

Exactly what Matson has set his eyes on remains a bit vague. Jean Souch told *Acorn User* that she didn't think Matson was absolutely sure what he was going to do in the short term, though it probably wouldn't be tied to the confines of the National Curriculum.

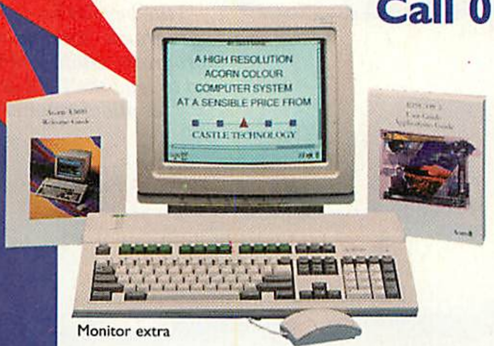
Acorn

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THE A3010 COMPUTER

The A3010 is ideal for schools, small businesses and, of course, in the home. The A3010 shares the same processor and main electronics as the A3020 & A4000 computers. It has one internal expansion slot, a serial port, two joystick ports and a parallel printer port.

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SCSI

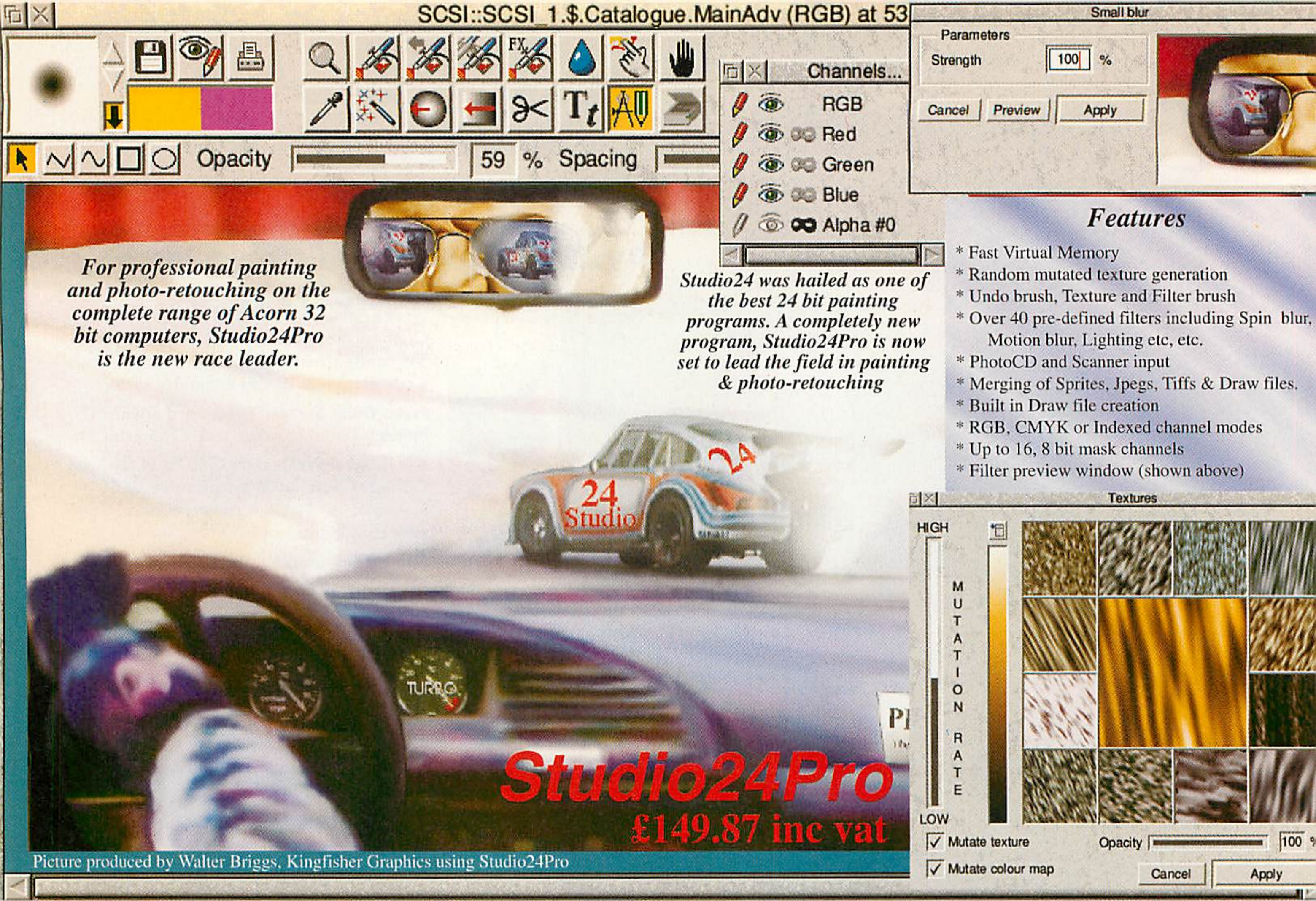
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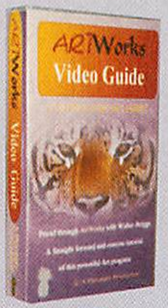
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ArtWorks Video Tutorial



A Brand new product from Pineapple is this VHS Video Tutorial covering the use of ArtWorks. Walter Briggs is the tutor for this 1 hour video which shows how to use all the ArtWorks tools and then goes on to show how Walter produced his famous Tiger head picture. Walter also draws an impressive landscape picture which can be copied by those with no artistic talent at all!

ArtWorks VHS Video Tutorial £19.99 inc vat

A4 Colour Scanners



New from Pineapple a low cost A4 flatbed colour scanner from Primax. Supplied with Imagemaster and Twain software this scanner provides the perfect low cost solution to home colour scanning. With a basic resolution of 300 x 600 dpi this scanner is unbeatable value.

Primax with Imagemaster & Twain	**£359.00 inc vat**
As above + Studio24Pro	**£439.00 inc vat**
SCSI interface + cable	**'phone**

Epson Colour Scanners

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GT-5000 (parallel)	**£425.00**	**GT-5000 (SCSI)**	**£499.00**
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Essex IG1 1XT
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The not so distant future

OCCASIONALLY people write in asking what is going to happen to the platform, what new products are on their way and if certain applications *are going* be improved. I can hardly ever answer these questions with certainty – nothing is ever certain in the computer world. However, speculation is always an option, and that is what I shall now indulge in.

Two letters came my way concerning printing. One was about the superb Epson Stylus Colour printer and why the images printed by Epson in its manual cannot be reproduced by any Acorn drivers. The answer is that the PC and Mac drivers for the Stylus Colour are simply superb in their exploitation of that wonderful technique called error diffusion.

Error diffusion gives the slowest but probably the finest printing results attainable from current ink/bubble jet printers and is actually offered by the standard Acorn printer drivers. However, the Acorn algorithm takes about four to five times longer to print than the Mac or PC version, does not cache the image to disc and produces much 'heavier' results.

I would have expected that a third party would by now have tried to emulate the industry standard software – for instance CC's *TurboDriver* software – but none has, and the quite astonishing true 720x720 dpi capabilities of the Epson still remain the pride of the Mac and PC. To write a driver that made the most of this printer would be a wise move as many Acorn users would benefit. I think that 1996 will possibly be the year for such software; I'll certainly be encouraging it, not least because I own a Stylus Colour myself and it is a shame to be forced to print from my Mac (I only use it for scanning, honest).

The other letter was in fact a series of correspondences regarding direct drive laser printers. The Acorn machine – even without its multiprocessor potential – offers serious advantages over conventional laser printer solutions in terms of speed of its RIP (Raster Image Processor), but with only Calligraph still in the direct drive business it is difficult to say whether Acorn direct drive technology will keep up with laser printer advances. RIPs are becoming faster and RAM prices are falling. Direct drive printing has much potential: super-fast data transfer, use of the computer's RAM and increased RIP speed on each processor upgrade.

In my opinion, however, developing and updating the printer driver RIP to generate the same quality of image as Postscript reliably – if more slowly – manages, is a tremendous challenge to one small company. It may in the end prove too great a task.

If you share the curiosity and enthusiasm of the many readers who have written asking about 3D graphics and where it might be going, then this could be your issue. We have the full review of the marvellous modelling package *Top Model* only a few pages away. As you will read, there is much to look forward to. Perhaps I am prematurely counting my chickens, but I smell good news for Acorn 3D fans in the 1996 air.

The next issue is the graphics issue, and I will be referee to mortal combat between all the big contenders in the bitmap graphics stakes: *Photodesk 2, Studio 24 Pro, The Big Picture, Revelation Image Pro* and some of the lesser-used bitmap products like *DA's Picture*. As to peoples' queries asking which is the best bitmap package, I used to say that the best all round solution is to buy them all. But have things changed?

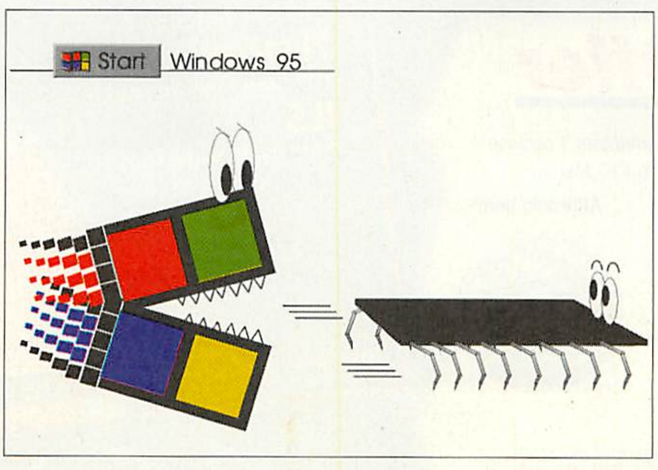
Also in the graphics issue and indeed throughout 1996 we will be looking at the video graphics scene in depth. Moving JPEG from Irlam is a big move in the right direction, and with *CineWorks*, the new challenger to the superb *Eidoscope* video editing suite, things are really hotting up at the lower end of the digital video market also.

My prediction is that with new, super fast versions of Replay in the pipeline, high quality video editing will become accessible to a great many more users than now. This will open the way for many more interactive video applications on the Acorn – a must if the platform is to stand its ground both in education and graphics.

There is much to look forward to in 1996. Please keep writing in and I shall continue to try answering your questions.

Pic of the month

THIS month's winner is Richard Pitt, aged 13, who created this very amusing (not to mention highly informative) image. Richard produced this on a 4Mb A5000 but it was comforting to be reminded that you can happily run *ArtWorks* on a 2Mb machine. Most PC vector graphics applications are really only workable with 12 to 16Mb in Windows 95.



Leonardo's software

Aspex hopes to be releasing the first of four modelling programs by BETT – *Da Vinci 90*. The graphics engine now manages to achieve a very impressive 45,000 gouraud shaded polygons per second. Insiders at Acorn reckon that the theoretical ceiling for the ARM700 at 40MHz is only 10 to 20 per cent greater than *Da Vinci's* 45K. Encouraged by this real world and wholly reliable performance, Aspex – in conjunction with Argonet – has decided to try to use its engine for VRML (Virtual Reality Modelling Language) in web browsers.

Nearing completion, *Da Vinci 180* (the next instalment of the package) includes six more shape creation tools including profile spiral and taper. Bezier patches are already working, as are bump/texture mapping. 24-bit texturisation, 'environment mapping' and transparency will be in *Da Vinci 180*, but for raytracing we will have to wait for *Da Vinci 270* or *360*. Export into and possibly import from DXF should appear in 180.

Aspex Software
Tel: (01822) 611060

Competition time

Spacetech has announced a competition that must not be missed. Any uncopyrighted imagery created using *Photodesk* can be entered with a short commentary for publication in Spacetech's WWW site tutorial pages. First prize is a fabulous Fotofun dye-sublimation printer worth nearly £400 and 10 runners up will receive free upgrades to *Photodesk* version 2.

Spacetech
Tel: (01305) 822753
Fax: (01305) 860483
E-mail:
info@spacetec.demon.co.uk

Contacting me

You can contact the graphics page by writing to me, Jack Kreindler at Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to jack@argonet.co.uk.

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What is is the next issue?

- Make your own puppet theatre – All you need is a computer and a printer
- Maggie Philbin – Juggling career and family
- Computer Kids – A new school club for children as young as 11 months old
- Interactive Learning Systems – The new software revolution in schools?
- Bullying – What to do?
- History – How it is taught in schools
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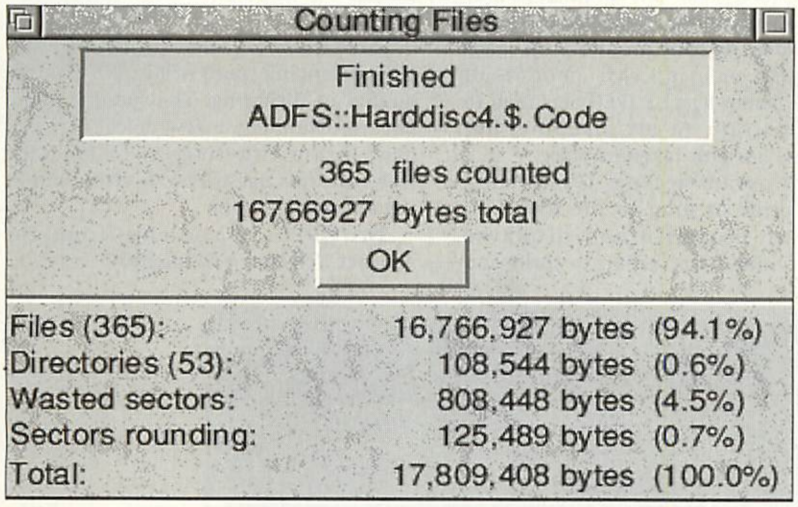
Send to: Parents & Computers, £1 Offer, Media House, Adlington Park, Macclesfield SK10 4NP.

Acorn User Feb

Public Domain

Realcount

IF you've experienced the problem of counting files before copying them to a floppy, only to discover that they don't actually fit on your disc, Realcount is the ideal desktop addition for you. The program patches the Risc OS count facility to take in space used by several things the standard count facility doesn't actually include. When a normal count (initiated from the Filer menu as usual) is complete, the results window includes an extra display giving the real disc space taken up by the files you've just counted.



Realcount is very easy to set up and its icon can be removed from the bar, as it isn't really necessary. Add it to your boot sequence now. Realcount is on disk UT278 from the Datafile PD.

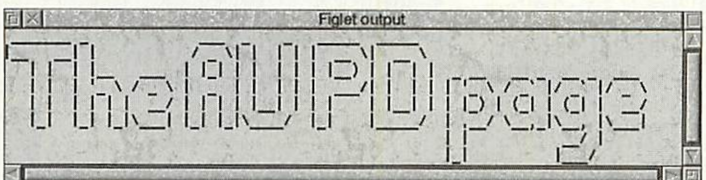
Figlet

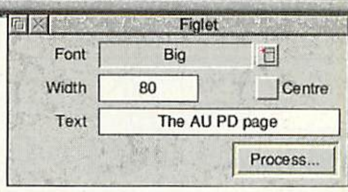
OVER-THE-TOP .sigs seems to be all the rage in e-mail and news postings on the Net and, although I'm a firm advocate of individual design, Figlet might just help out anyone lacking in ascii-art skills.

Figlet is a small and incredibly simple program to use.

All that's required is to enter a string of text in the create window, and Figlet will reproduce boring standard text with a large font chosen from a list of 13 styles.

You can then easily drop new text on to the end of your e-mails. Not an ideal solution, but it may save a few postings on the Usenet ascii-art newsgroup. Let's hope the author, Paul Corke, will extend the basic design with new fonts and one or two logos.





Figlet is available from the Acornet web site in Germany.

Software to design

THIS is a new section on the PD page which I'm starting up, to encourage the development of new and interesting PD. I often hear requests from non-programmers for a certain utility or tool for the desktop, but all too frequently these ideas are never implemented. What I hope to do, is print ideas for new programs which you, the reader, would like to see.

Anyone out there willing to implement the ideas could well see their software on the AU cover disc as part of the AU PD scheme. I'll set the ball rolling with a program I'd like to see which patches Filer operations on the desktop. Currently, copy operations display information on the number of bytes to go for each file being copied. I'd like this replaced with either a total bytes count for the entire copy, or even better, a percentage complete bar to show how much longer the operation will take. If you've got ideas or implementations, please get in touch at the usual PD page address.

Enderby into action

Occasional contributor to this page, Mike Enderby, has taken up the role of maintaining the PD section of Acorn User's web site. PD online will be regularly updated by Mike, with information and programs linking in with this page. Contributions and suggestions are welcome and should be directed to mike@ultrasnd.demon.co.uk. We're particularly interested in hearing from software authors who would like to be added to our online scene database. Thanks to everyone who's contributed information so far.

Hourglass

With the profusion of hourglass tools available in the PD scene, there's no excuse to have the same boring old hourglass on your desktop. Several new hourglass modules have taken residence in my boot sequence over the last few months, but the current winner is a cute little running dog. The graphics were ported from the PC and converted by Joie Oiee. The cute Rover hourglass is freeware and is available from the AU web site.

Xtreme

Some quick apologies to the Belgium demo group BASS who have recently produced the excellent 4-disc demo, X-Treme. Co-author Frederic Elisei felt, in a previous PD page, I hadn't given BASS enough credit for what was their production.

APDL takeover

One of the largest Acorn PD libraries, APDL, is about to expand even further with the takeover of another library. By the time you read this, Arch Angel PD, which was previously run by Sean Creech, will have become part of APDL. The range will certainly be safe in the expert hands of shareware guru, Dave Holden. Contact APDL at: 39 Knighton Park Road, Sydenham, London, SE26 5RN.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP.
Or preferably, by e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

Swift JPEG

FOLLOWING on from last month's PD graphics special, there still seems to be a profusion of new graphics programs. This is very welcome to avid PD enthusiasts like myself. I just hope this rate of new software production is maintained.

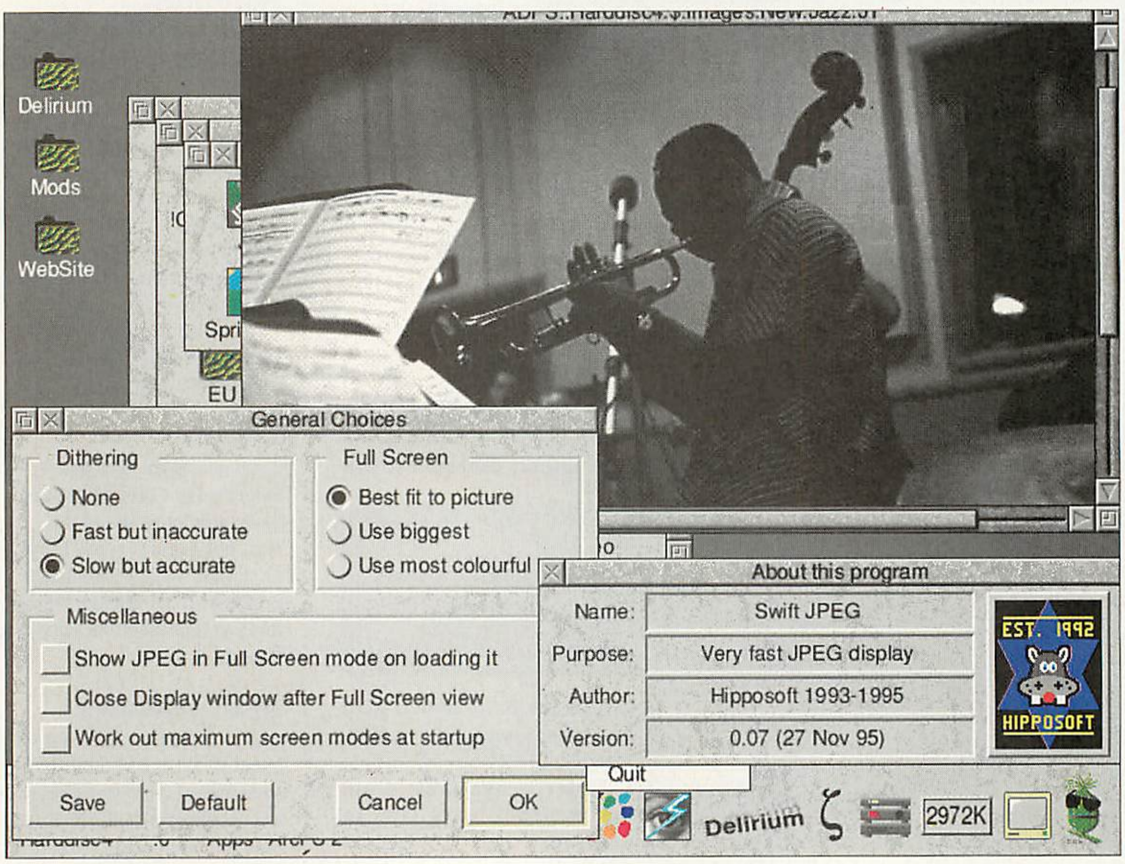
In parallel with this comment is an increased interest in the Risc PC. It's taken a long time but a decent amount of software that takes advantage of the Risc PC's abilities now seems to be appearing. I'll be covering more of this in the coming months.

SwiftJPEG occupies both of these categories and deserves to take a regular place on your Risc PC icon bar. Serious handling and processing of JPEGs usually has to be performed by a trusty copy of ChangeFSI, but I've always found it handy to have some sort of quick display device so you can rapidly check out a picture without messing around with loads of settings, or using vast amounts of memory. James Beech's JPEGview used to fulfil this role on my machine, but SwiftJPEG has now taken its place.

The program accepts JPEGs via a double-click or drag to the icon bar. JPEGs are processed and displayed rapidly without conversion to sprite format. This keeps memory to a minimum, while using Acorn's fast display code. Unlike JPEGview, SwiftJPEG uses a proper re-sizable window and is fully configurable to use full screen display if necessary.

Three levels of image quality are available, balancing speed of display with the quality of dithering. The speed is good, but unfortunately a few defects are evident in the dithering in some modes. However, this doesn't occur often, and its not a major problem.

SwiftJPEG is available from the Acornet web site in Germany.



SwiftJPEG processes and displays rapidly without conversion to sprite format.

Echelon Software

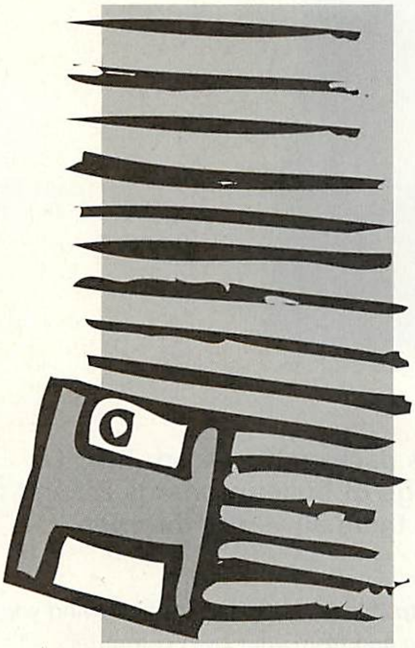
I'VE recently picked up a disk of new software currently being developed by a PD group going by the name of Echelon Software. All the applications and utilities were worthy of review, so you'll probably be seeing more from this coding team over the next few months. Here's a sample of the team's work, to whet your appetite.

Griffin is the crew's most impressive program to date, and takes the form of a complete compiler for a C-like language. The aim is to create a full C compiler to the standard of the commercial programs available. Griffin is already some way towards this aim and I can't wait to see the full C compiler, which will be freeware.

As well as full blown applications, Echelon have also produced a good range of small utilities. App-l is a toolbox-style application launcher which is easily customisable, if a little on the large size. **Gamma** allows software adjustment for the brightness and contrast on Risc PC machines. Finally, Windoze95 offers little help to your desktop, but renews your faith in Acorn with a host of cutting comments about a certain PC operating system.

At the time of writing, all these programs were still under development, or waiting to be released. For more information on Echelon software, contact :
Craig Beech, 30 The Deerings, Harpenden, Herts, AL5 2PE, or by e-mail to: craig@hell.btc.uwe.ac.uk.

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If backing up your data is a problem grey area, then perhaps you had best consider powering up a permanent solution.

The latest edition to the Power-tec range of low-cost hardware solutions is a backup tape drive for mounting internally in your Risc PC.

Complete with a 350MB tape for starting a sensible backup program for your important data, this Power-tec drive is a compact and attractive alternative to over 200 floppy discs. It is multi-tasking, network compatible, and comes with software for timed and selective backups.

And from only £175 exc VAT, not a costly exercise either.

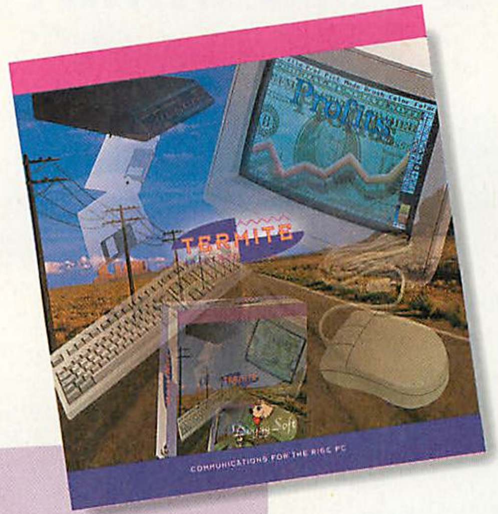
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Termite is an all-purpose communications package for Acorn RISC OS computers. It gives you access to the vast range of bulletin boards around the world, and to the biggest network of them all — *the Internet*.

TERMITE INCORPORATES THE FOLLOWING:

- An extremely easy to use and consistent user interface.
- A dialling directory packed with bulletin board numbers from around the country, all supporting the Acorn community. Just click on where you want to go and you're there!
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- Built in call costing, to continuously inform you how much you have spent so far.
- A comprehensive but simple script language which allows you to automate your activities.
- A range of emulations and file transfer protocols, to ensure that you can connect and transfer files on the majority of the bulletin boards.

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- *ftp* (file transfer) facilities allowing you to transfer files to and from your own computer.
- The ability to connect to other machines on the Internet using *Telnet*, for example you can join in a chat with dozens of people or connect to an Internet bulletin board.
- Miscellaneous useful functions such as *ping, time, traceroute* and *finger*.
- There are also lots of servers included — even a web server, so that while you are connected others can read your own WWW pages.

REQUIREMENTS:

- 2MB RAM minimum (4MB Recommended).
- Risc OS 3 (version 3.10) or later.
- A hard disc drive.
- A Hayes compatible modem (14400bps or greater recommended)

If you wish to use the Internet features you also require a subscription to an Internet provider.

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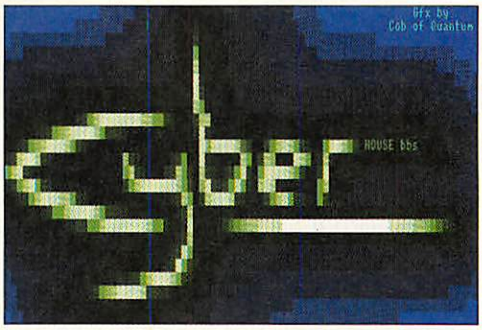
Comms

Welcome to the CyberHouse

DAVID Cutting's CyberHouse BBS is the third and newest Bulletin Board in Norwich, which is now well served by Acorn BBSs. The CyberHouse is run on *Archiboard* software, whose author Keith Marlow also lives in the city and runs the support system Archiboard Central BBS. David's BBS has recently had periods of unscheduled down-time, but most facilities are now restored.

The CyberHouse runs on an Archimedes A410/1 with internal 40Mb and 100Mb external SCSI drives. David's expansion plans include addition of a 540Mb disc, which is a pretty essential minimum size these days, and probably cheaper than a smaller drive as well. The modem used is a USR Sportster 14k4 FAX Modem. The BBS offers e-mail and newsgroup Internet access via the ctsys.demon.co.uk Demon Internet account.

One unusual and rather cheeky suggestion made to users is that they consider purchasing a dial-up line of their own, to be supplied by the local cable company *Bell Cablemedia*, costing £20 for installation and having a reasonable monthly rental. The alternative suggestion of sponsoring a line that announces the sponsor's name when called seems more likely to succeed, but not many Acorn users are really that vain, are they?



Cob strikes again at the CyberHouse

David is studying full-time and working when he can, which only just covers running the BBS, so £15 registration donations are one way of being able to afford to offer greater access and improved features. Plans for these include real-time telnet/ftp and CD-ROM access.

The CyberHouse has a good selection of message areas, concentrating on RiscNet, SchoolNet and WolfNet, with some Usenet newsgroups but only a few Fidonet areas. The CyberHouse Fidonet address is 2:2501/216.0. I found one or two menu inconsistencies, but I know from experience that it's very easy to miss some errors until they are pointed out by a gleeful user.

The CyberHouse BBS
(01603) 502645

FidoNet for Acorn users – the way forward?

THERE have been recent rumblings in the Acorn interest FidoNet message echoes about delays and gaps in the distribution chain of message transfer between BBS systems. FidoNet exists to link together Bulletin Boards so that each can benefit from discussions, knowledge and interests of the network's members, and that the whole network can be better than its parts.

Although FidoNet is a world-wide organisation which covers almost every subject, Acorn users have access to a range of message areas or echoes of specific interest to the computer they favour. Unlike the Internet, which is free to use but can cost money to 'join', FidoNet membership is always free and all actual costs are paid by the dedicated BBS operators that maintain it for their own and their users' enjoyment.

There have been attempts to set up various separate non-FidoNet networks for Acorn bulletin boards to try to concentrate Acorn interest, but in practice this has had tended to separate and fragment message distribution even more, producing a my-network-is-better-than-yours syndrome and increasing the separation of Acorn users from the rest of FidoNet.

Many Acorn interest echoes are not 'backboned', which means that they are not part of the worldwide FidoNet distribution, so getting them from BBS to BBS has depended on short time-delaying hops between systems. An informal committee of Acorn System Operators (SysOps) has been formed to look at these problems, and some solutions are beginning to emerge.

One former Acorn owner who already operates a British Telecom Midnight Line service as a FidoNet Hub message distributor has offered a low-cost package to Acorn Sysops to supply all the Acorn interest echoes from one source for a £15 per quarter subscription. This would indeed close the gaps and keep everyone together in FidoNet, and is still far less than an Internet service subscription.

Some Acorn Sysops interested in this will have already read about this in the echoes, but you can Netmail or e-mail me for details at the addresses given on this page.

Rayners Brain

Brain Storm BBS is the creation of sysops Angela and Helen Rayner. Their new *ArmBBS* system runs on a Risc PC 700 and connects via a Sportster 14400bps modem. Brain Storm BBS is located in Borough Green, Kent which means I now have access to an Acorn BBS at local rate. Helen and Angela bring a welcome female viewpoint to a rather male-dominated BBS arena. Brain Storm is currently on-line from 18:00-21.30, and welcomes more users, message writers and file uploads.

Brain Storm BBS
Modem: (01732) 886638

Mage's Pages

The Mage BBS team has announced the launch of World Wide Web pages of Acorn-related products. The site is sponsored by Citynet and will offer a range of Acorn Software at competitive prices. Companies and individuals with products to promote are invited to contact Rajesh Sinha at rcs1@doc.ic.ac.uk.

Mage Pages
http://www.citynet.co.uk/users/mage

Fax facts

Steven Kramer's *Fax* program has been moved from the URL previously mentioned. This program can control Class 2 fax-modems, and generate and transmit the appropriate fax image data from virtually any RISC OS document. Steven describes his home page as boring, but if you're into the *Far Side* you'll be amused. The new home page URL is shown below.
http://www.astro.uva.nl/stevenk

Contacting me

Send me any interesting Acorn-related URLs you find, and I'll publish a monthly selection. You can contact me by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

ACT!-ion

ACT!, the world's best known contact manager, is now available for the Pocket Book II/Psion 3a. *ACT!* can record details of any telephone conversation, automatically produce addressed letters, make an appointment in *Schedule/Agenda* and automatically dial telephone numbers from its database.

ACT! also features an integrated report writer that includes seven standard reports and an unlimited number of custom ones. The Pocket Book version also includes the invaluable facility to transfer data to the Windows version.

ACT! is supplied on a floppy disc and costs £97.95 inc VAT.

Psion plc
Tel: 0171-258 7368

Widget's reference

If you are having problems getting to grips with your Pocket Book II then Widget's new reference guide could be the answer. The guide is based on the Psion 3a and provides the answers to many queries you may have including:

- How do you copy a style between *Write* documents?
- In *Schedule*, what is the quickest way of moving to the following Monday while in the day view?

No prizes for supplying the answers to these, by the way...

The guide is supplied in an A5 folder and costs £24.95.

Widget Software
Tel: (01438) 815444

Power-hungry link

If you use the A-Link – or PC or M-Link, for that matter – you may find your batteries don't last as long as they used to. This is because using the link consumes quite a bit more power than usual. The solution is to buy a mains adaptor and plug that in when using the link. The adaptor can sit by your computer ready for use; in effect you 'dock' the Pocket Book.

Contacting me

You can contact the Portables page by writing to me, Mark Taylor at Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP; or by e-mail to markt@idg.co.uk.

Sales Assistant

THE Pocket Book II is an excellent computer for the business person on the move. Recognising this fact Portable Software developed its *Assistant* range of business software. Over the next couple of issues I'll be taking a look at some of the *Assistant* range, starting this month with the *Sales Assistant*.

Sales Assistant is an integrated sales system which can handle orders, invoices, delivery notes, loans, estimates and purchases. The program will work on both the original Pocket Book and the newer Pocket Book II and costs £89.95.

Orders, loans and so on are all entered using *Sales Assistant's* easy-to-use data entry screen and the program can automatically convert estimates into orders and print out the relevant documents as and when necessary. The package can also keep track of stock levels and inform you when items need re-ordering. *Sales Assistant* can keep track of credit card sales and has the ability to check if the credit card is stolen.

The program can be fully customised and allows details of exchange rates, credit card types, carriers and much more to be entered and used throughout the package.

Overall, *Sales Assistant* is an excellent package for any travelling sales person. My only criticism is that, at times, the user interface seems a bit odd. This is mainly due to the limited screen size and the sheer number of features that are packed into the program. This fact, however, can not detract from another excellent example of what can be achieved on a Pocket Book.

Portable Software
Tel: (01904) 633918

SoundMaster

IN September's issue of *Acorn User* I mentioned a new program from Psion called *SoundMaster* and promised to take a look at it in the near future. Well, whether or not you call five months the near future is debatable, but never say I break my promises.

SoundMaster is a sound sampling package for the Psion 3a/Pocket Book II which costs £29.95. The program is supplied on a high density PC disc and so a high density disc drive and an A-Link are needed to use it. The program can record samples directly or can accept any Psion .WVE file. If you have a PC card, two programs on the disc will convert .WVE files to Microsoft .WAV files and vice versa.

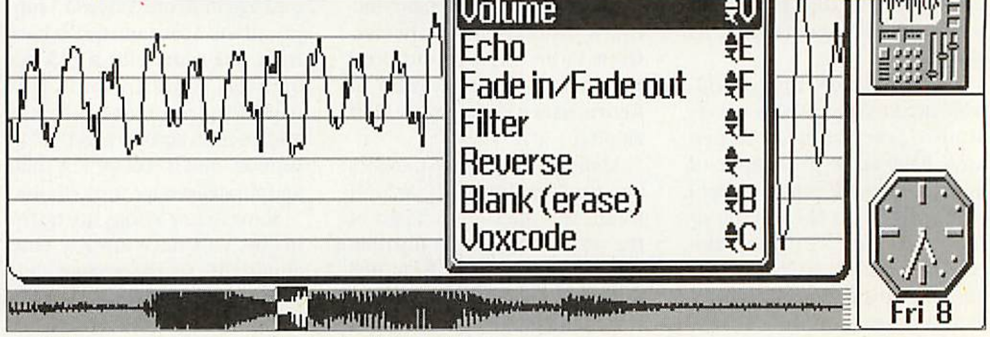
Once a sample has been loaded into *SoundMaster*, what exactly can be done with it? Well, *SoundMaster* allows you to delete, move or copy parts of the sample as well as mix two samples together. The program also allows you to adjust the volume and speed either of the whole sample or of parts of it. You can add special effects – echoes, vibrato, fades and filters – to any part of the sample and apply one of four types of waveform: sine, block, saw or white noise.

One of the nicest features, in my opinion, is the Voxcode option. This allows you to make your sample sound either robotic, watery or choral. It can transform even the most boring sample into something interesting.

Overall, for its price *SoundMaster* is an excellent program with many useful features. My only worry is how useful it actually is to the average Pocket Book user. However if you have any need to manipulate sound samples on the move then get it.

• *To see the capabilities of this program a few samples are included on the Acorn user WWW site at http://www.idg.co.uk/acornuser/magazine/au165/. They can be playes using the test option in Time.*

Psion plc
Tel: 0171-258 7368



Manipulate samples in your Pocket Book with *SoundMaster*.



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510MB IDE	n/a	n/a	n/a	£159	£159	n/a
850MB IDE	n/a	n/a	n/a	n/a	n/a	£159
1.0 GB IDE	n/a	n/a	n/a	n/a	n/a	£195
540MB SCSI	n/a	n/a	n/a	£145	£145	£145
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1.3 gb with 1 cartridge	£1379

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ArcComm S/ware £39
Voyager Internet suite £59
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ArcComm S/ware £39
Voyager Internet suite £59
£195

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ArcComm S/ware £39
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Cover disc

Resource editor demo

Applied Risc Technologies

WHEN, around a year ago, Acorn released its *Desktop C/C++* system, one of the most highly-praised aspects of the package was the resource editor. This allowed menus, dialogue boxes, error boxes and icon bar icons to be created and linked together, with this structure then being easily incorporated into the design of the application itself.

This reduced enormously the effort needed to create Desktop applications, and allowed for users to develop a consistent design across their applications, complying with the Acorn style guide. At the same time, Acorn released a set of modules called the *Toolbox* modules which took most of the more awkward aspects of WIMP program design away from the user. Such constructions as save boxes and colour pickers became much easier to use.

On the cover disc is the complete set of Acorn's *Toolbox* modules, along with a demonstration version of the *ResEdit* resource editing program. These were originally distributed to Clan Acorn members last year as one of the regular mailings sent out to members of the enthusiasts' group; now non-Clan members can see what they're missing.

The first thing to do is to run *SysMerge* and update your copy of *System* with the *Toolbox* modules, unless you have them already. If you don't do this then *ResEdit* will be unable to find the modules that it needs to run and will give an error.

When you've done this, you can follow the steps given on these pages to create your own skeleton application. Of course, in the demo version you won't be able to save the files, but by using *ResTest* you can see how your skeleton application would look to the user. Quite sophisticated chains of windows and menus can be built up in this way – if you want a challenge, pick an application and copy part of its design. You should soon see why Acorn's resource editor won the award for best programming tool in this year's *Acorn User* awards; I'm not suggesting that writing a good Desktop package is then trivial, but you are free to concentrate on the aspects of the program that *ought* to be tricky.

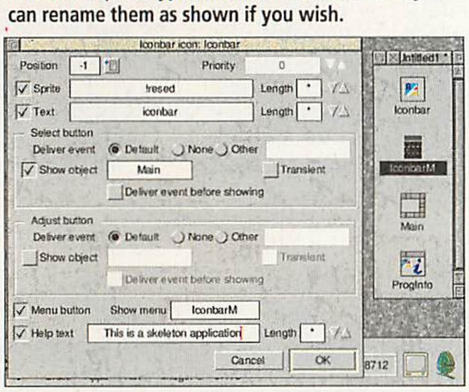
If this demonstration has convinced you that the Acorn *Desktop C/C++* environment is worth having, check out our offer on page 46 for UK Clan members; it's worth joining the Clan just for this offer.

The *Toolbox* modules are © Copyright Acorn Computers 1995. They are distributed on this disc under licence. If you wish to distribute them in your own programs you must have a licence from Acorn to do so – such a licence is included in *Desktop C/C++*. *ResEd* and the *Toolbox* modules need RISC OS 3.1 or greater to run; *Desktop C/C++* itself needs 4Mb RAM minimum.

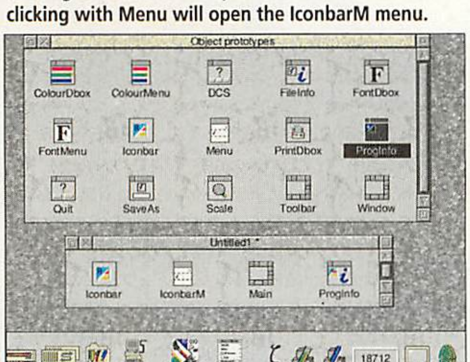
Chris Cox (Clan Acorn)
Tel: (01223) 254254
Fax: (01223) 254262
E-mail ccox@acorn.co.uk

Getting started with ResEd

ResEs1: Load both *ResTest* and *ResEd* onto the icon bar. Open the Prototypes and an Untitled window by clicking on *ResEd* with Adjust and then Select. Drag four of the prototypes to the Untitled window; you can rename them as shown if you wish.



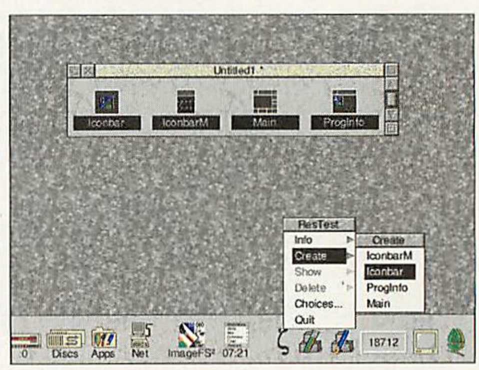
ResEd2: Double-click on the Iconbar icon in the Untitled window to edit it. From here you can change how your application's icon bar icon looks and behaves. If you drag one of the other resources to a writable icon, it will attach itself to that event. Here, Clicking with select will open the Main window and clicking with Menu will open the IconbarM menu.



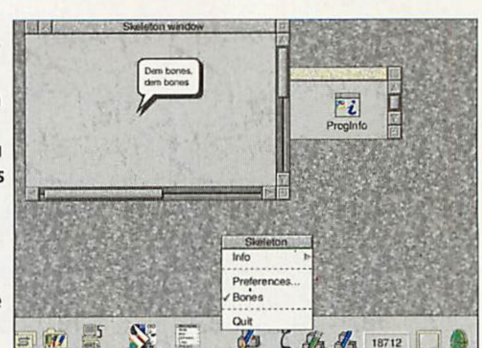
ResEd3: Edit the menu. Initially the menu has only one entry, but more can be added by dragging sample entries from the Menu entries window. These can be positioned anywhere in the structure, and existing menu entries can be dragged around to reposition them.



ResEd4: When you have finished editing your resources, select them all and drag them to *ResTest* (with the test tube full of green liquid). Then go to the Create submenu and choose Iconbar to set up the chain of resources starting with your icon bar icon.



ResEd 5: Choose Iconbar from *ResTest's* Show submenu. Your skeleton application will appear on the icon bar, and you will be ably to try out its menu and window structure. Note that even interactive help works. To remove *Skeleton*, use the Delete submenu from *ResTest*.



Regular items

Various authors

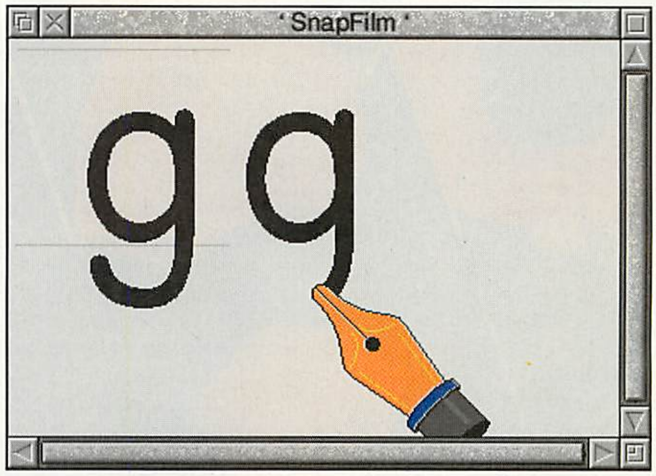
IT was a squeeze, but we got most of the usual regular items on this issue's disc – a few that didn't fit on can be found on the *Acorn User* WWW site at http://www.idg.co.uk/acornuser/magazine/au165/. The items that are on the disc are:

• The C tutorial, containing two versions of a minimalist Desktop program. Both do exactly the same thing, but *_swi* is more compact as it uses Acorn's **_swi()** function – unfortunately this means that it will not compile using *Easy C* from Beebug, which is why *shell* is provided.

• The *Education* directory has a copy of projector and a short animation showing how to write a lower case letter g. The animation was created using *SnapHappy* from SEMERC, and many similar animations can be found on one of the discs in the *Acorn User* gift pack available to subscribers, making up a complete lower case alphabet and a set of numerals.

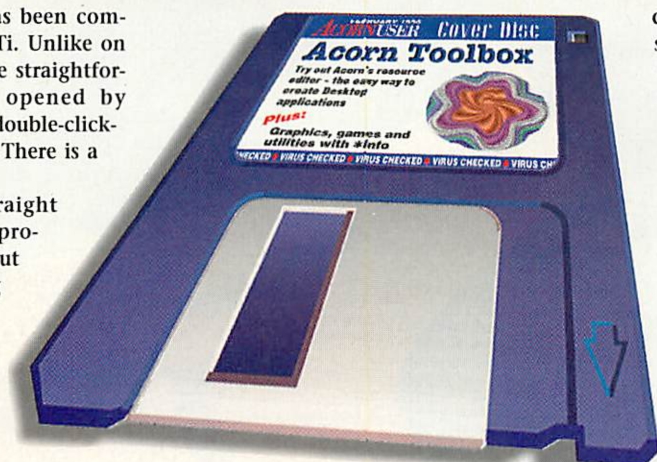
• Run the RISC has a program to emulate a digital voltmeter. Please note that you should only run the *PinTST* BASIC program if you have designed the project mentioned in Mike Cook's column, otherwise you are likely to crash your machine. The *DVM* application in principle checks to see whether the hardware is connected before running – but it's safer not to run that either. After all, there's no point if you haven't connected the hardware.

• The *INFO directory contains the programs described in the *INFO section of the magazine. These range from graphics demonstrations that do nothing more useful than drawing pretty(ish) pictures on your screen to a Desktop utility that prevents your icon bar from vanishing behind a mess of windows. Not only are the programs in this section worth running, it is always worth looking at how they are written to pick up some programming tips for yourself.



Disc information

Various authors



THE software on this disc has been compressed using *ArcFS 2* from VTi. Unlike on many previous discs, these are straightforward archives which are opened by running a copy of *ArcFS* and double-clicking on the archive to open it. There is a copy of *ArcFS* on the disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process.

Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc. If your disc is faulty, then you should test whether it will verify by clicking with Menu on the floppy drive icon and choosing 'Verify' from the menu.

You should then either return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH (if it does not verify or is damaged) or to the editorial office at *Acorn User* (if it verifies).

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.204 from Pineapple Software. See the article on virus killers – page 30 – for more information.

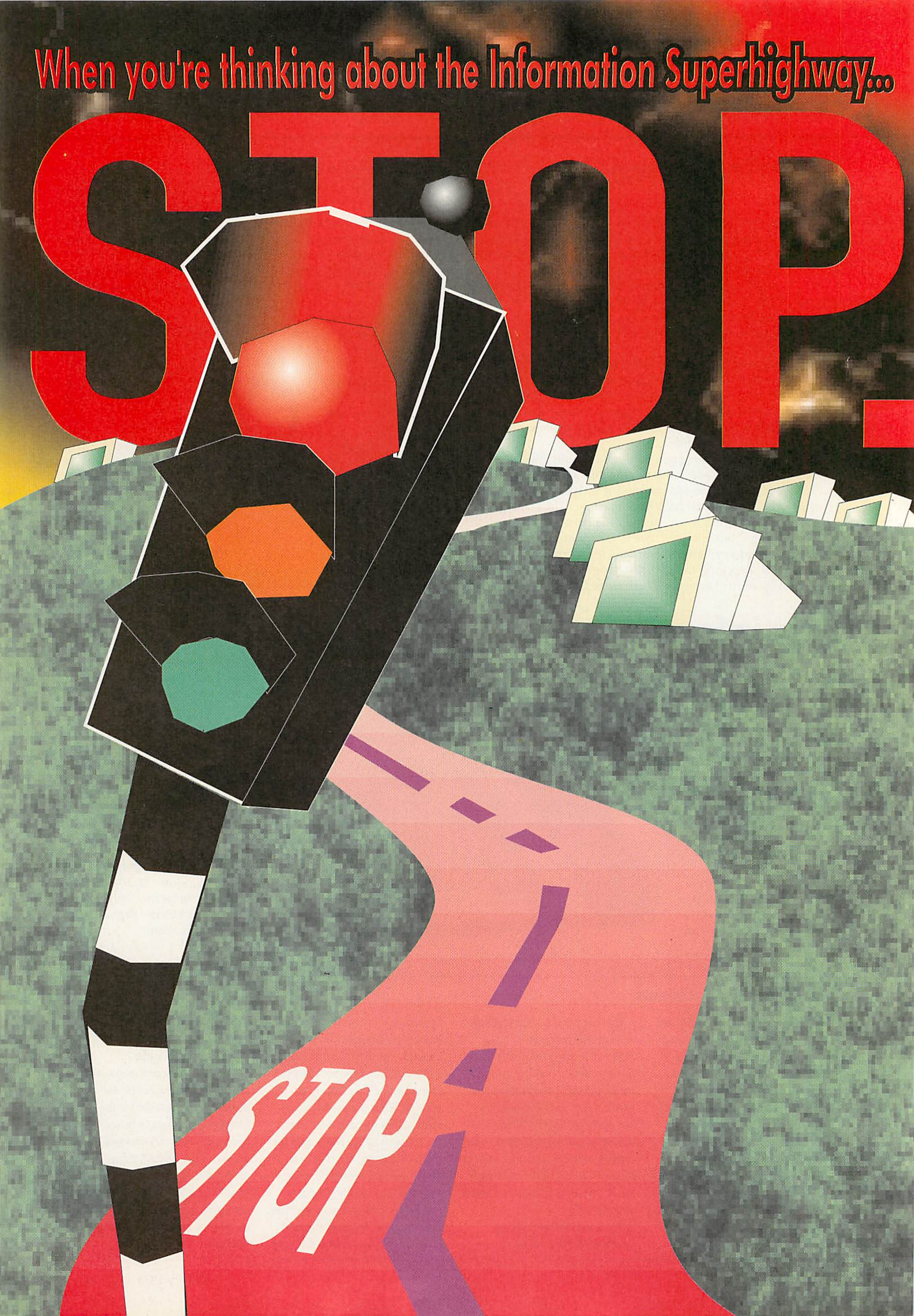
Feedback and problems

Way back in October we published the program *Director* on the cover disc. This caused a few readers problems with 'Bad parameters' errors on loading. Happily we have now tracked down the problem – details are given on the Questions and answers pages on page 84. An updated version of *Director* will be released soon and may well appear on the *Acorn User* Web site; it will also be featured as an update on our next CD-ROM.

FistLore caused a few problems with people trying to run it in 2Mb machines. It will (just) run, but you have to unplug every module in sight and remove your hard drive if you have one; it's not really suitable for 2Mb machines and we apologise to any readers who were inconvenienced by this. ICS told us it would work (well, that's our excuse, and we're sticking to it).

There was an error on last issue's CD-ROM from Acorn Education, which gave the wrong address for Norwich Computer Services, one of the Centres of Technology. The correct address is printed in the Clan feature on page 46. Some people have commented that this disc didn't have the contents of the cover discs for the past year on; this is because it was in essence Acorn Education's disc, and they are handing out free copies totally separately from the magazine, so it had to stand on its own as a complete disc. The next CD-ROM done by *Acorn User* will have those files on, and a whole lot more besides.

Finally, at least one reader had problems with the *TopModel* demo because it asked for the *ChangeFSI* program to be seen before it would run. *ChangeFSI* is on one of the RISC OS 3 discs that comes with the machine, or may be in the *Utilities* directory on your hard drive. there was also a copy in the root directory of the CD-ROM.


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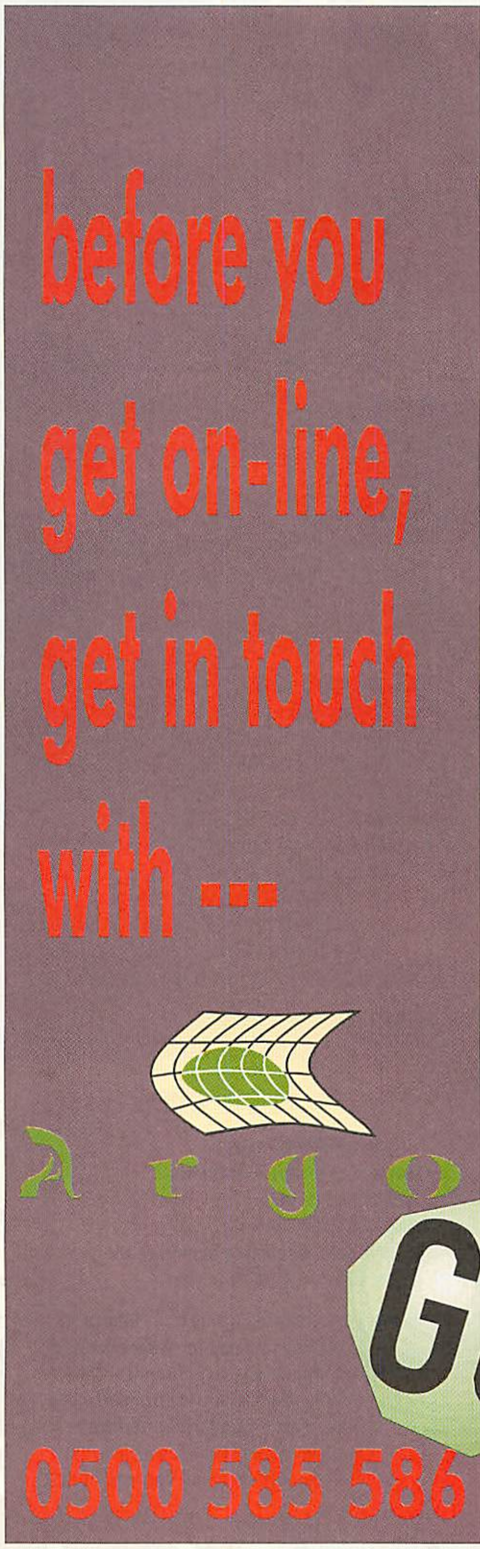
"The service from Voyager and ArgoNet has been excellent . I find it hard to believe from opening the modem packaging and software to being up and running in under 10 mins is truly amazing. The new software version arrived yesterday and works excellently."

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Coughs and sneezes

David Matthewman looks at the problem of viruses, and compares three programs designed to combat them on your computer.

Viruses are programs that spread by stealth. Some of them are harmful; some are cheeky or even witty; others crash the machine simply through being badly-written. They all have this in common: you didn't ask them to be on your machine, and you don't realise they're spreading.

Virus types

There are a number of unofficial 'classes' of virus. For instance, a *Trojan Horse* is a program which performs a useful function, but has extra hidden code which spreads a virus as well. One computer game infamously used this as a form of copy protection; the virus only activated on illegal copies. In another, sex-starved male computer users were invited to remove items of clothing from a picture of a woman on screen, while the program infected their hard disc in the background.

Neither of these were Archimedes programs – the only Trojan Horse on the Archimedes is the *Link* virus, which performs the useful task of turning Backspace into Delete as well as spreading a virus. Another class – the *Worm* – is unknown on the Archimedes.

Most Archimedes viruses install as tasks or modules in memory. One very effective early protection program stopped virus activity by looking for saves from the module area. Viruses tend to go out of their way not to be detected, so there's no easy way of classifying their behaviour because new strains will often try something new. However, most add a line to a program's *!Boot* or *!Run* file, and then either store themselves as an extra file within the application directory or append themselves to a module or *!RunImage* file.

Either when a Filer window containing the program is opened or when the program is actually run, depending on the type the virus loads into memory and starts to spread.

You cannot load a virus unless you boot or run the application (or module) containing it, but some can infect areas on your disc that you have not accessed; some, for instance, attack *Squash* in your *Library* directory.

Harmful effects

Many viruses do nothing more than spread themselves. Others pop up messages from time to time or crash the machine, and the most extreme will wipe discs and scramble the configuration of your computer. In general the more harmful the strain the slower it will spread, firstly because it will be noticed more quickly and secondly because destructive viruses often kill themselves in the process. This is of course no comfort if you catch one, but does thankfully make them less of a menace than they would otherwise be.

Even the supposedly harmless viruses can be a pest by clogging up memory or hard disc space.

The nastiest (of which there are a couple on the Archimedes) are those that sit quietly on your machine for a while, and then trigger on a particular date with unpleasant consequences. By this time the infection can have spread over a number of machines.

Virus killers

Over the years a number of programs have been developed to combat viruses. Many have now fallen into disuse as – to be

Product details

Product: Killer/VProtect
Supplier: Pineapple Software
Tel: 0181-599 1476
Fax: 0181-598 2343
E-mail: sales@pineaple.demon.co.uk
Price: £28.20 inc VAT per year

Pros: Very comprehensive virus library • Quarterly updates (or whenever a harmful new virus is found) • Will cleanly remove viruses from infected files • Fast • Good user interface • Successfully kills viruses resident in memory • Runs on all versions of RISC OS

Cons: None

Product: SmartKill
Supplier: MG Research
Tel: (01252) 621004
E-mail: 42327@sixth.demon.co.uk
Price: £POA

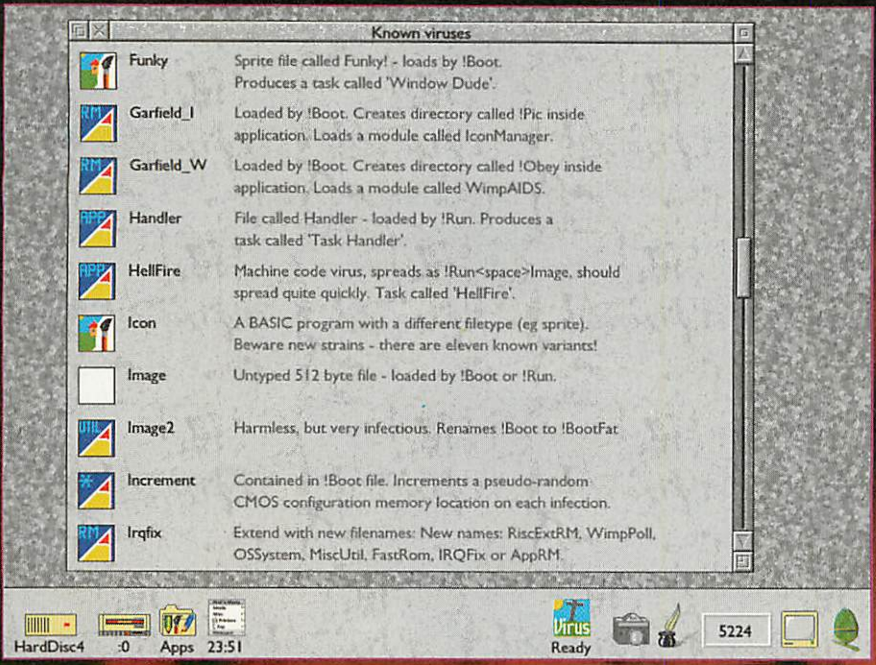
Pros: Checksum facility

Cons: Small virus library • Unreliable with viruses it claims to spot • Won't remove viruses from infected files • 'Inoculation' doesn't work • No regular updates • Poor user interface • Crashes if it can't read a file • Doesn't work on RISC OS 2 (problems with Risc OS 3.5)

Product: VZap
Supplier: Paul Vigay
Address: 104 Manners Road, Southsea, Hants PO4 0BG
Modem: (01705) 871531
E-mail: pvigay@cix.compulink.co.uk
Price: Shareware (£5 registration fee)

Pros: Cheap • Compact

Cons: Small virus library



Killer's virus database is extensive, and gives useful information about the viruses it knows about.

effective – they must be updated regularly. There are three 'current' virus killers: *Killer*, *SmartKill* and *VZap*.

The three programs were tested on an identical system – an A5000 with 50Mb hard disc – under two different conditions. First, the programs' effectiveness at stopping a selection from infecting the system was tested. Next, the programs were used to attempt to clean up a system infected with a selected set of viruses, ranging from the common ones to the latest strains. In principle, the software should be able to survive running in a hostile environment with active viruses. However, there's no reason to do this, since resetting the machine to clear the memory doesn't take long, and is a much safer operation. The virus programs were then run from a read-only filing system.

Killer

Killer from Pineapple Software is sold on a subscription basis. You subscribe to the Pineapple virus protection scheme every year, and in return Pineapple sends an updated copy of *Killer* to you every three months. It will also send out a copy of *Killer* if a new and harmful strain is discovered between updates.

The software is in two parts; *Killer* itself, which will scan discs and remove viruses from infected files, and *VProtect* which is a module which loads into memory and stops virus activity. *VProtect* won't stop you copying an infected program to your hard disc, but in nearly all cases will stop the virus from becoming active and spreading. It will also warn you if a virus tries to start, and so it will quickly become obvious if you *do* have a virus on your hard disc. *VProtect* is shipped with Risc PCs and A7000s as standard, although if you don't join Pineapple's virus scheme you won't get updates and newer strains will be able to slip through.

VProtect caught all the viruses I tried to activate and either stopped them running or rendered them harmless. There are a few viruses which are known to be able to get past *VProtect*, but none was available for me to test.

Killer itself cleaned every infection off the hard disc. Where the virus had infected a module or the *!RunImage* of an application, *Killer* was able to remove the virus and restore the original file. This is a much trickier operation than deleting lines from a *!Boot* file, and *Killer* was the only program to be able to do this. In all cases it was successful. *Killer* has a number of other points in its favour:

- Auto-detects all the filing systems on your machine, and allows you to scan each one.
- Automatically opens archives, even if you haven't got *ArcFS* loaded.
- Has a fast scan time – 2 minutes 34 seconds on a clean system.
- Has a separate Log file which can be kept on a writable filing system while *Killer* itself is on a read-only filing system.

SmartKill

SmartKill has a much smaller library of viruses that it claims to detect than *Killer* – about a quarter of the size. It is also much slower; a clean scan of the disc took 8 minutes 10 seconds. However, *SmartKill* has a number of 'features' which are missing on the other programs – I will discuss how useful these are later. First, how did *SmartKill* perform on the tests?

Its performance at keeping viruses off the system was woeful. The only ones it managed to stop were *Icon*, *Alien* and *DataDQM*. It missed *BBCEconet*, *BooHoo*, *dratsab*, *fcodex*, *Jester*, *Link*, *Module*, *MyMod*, *Poltergeist*, *T2*, *Thanatos*, *Parasite* and *CeBIT*. It claimed to have caught *Extend*, but failed to shut it down. On a Risc PC (or any machine with RISC OS 3.5/3.6) it did even worse – *SmartKill* cannot kill tasks on these machines which it blames on 'a bug in RISC OS 3.5 or greater' but I blame on bad coding as *VProtect* doesn't seem to have any trouble. Note that at least four of the viruses in the above list are ones that *SmartKill* claims to know about.

SmartKill did slightly better at scanning an infected disc. It found all infections of *BBCEconet*, *Icon*, *Extend* and *Module*, but missed *Jester*, *SystemUtils* and *Parasite*, despite claiming to recognise *Parasite*. However, its method of dealing with infected files left a lot to be desired. It did delete offending lines from infected *!Boot* files, but all other files were altered to a *SmartKill* proprietary file type and had their access privileges changed so that they could not be run.

The problem with this is that if you run *SmartKill* a second time, and it encounters a file whose access privileges prevent it from being read, *SmartKill* locks up and hangs the machine; we're into Alt-Break territory on RISC OS 3.5, or Ctrl-Reset on anything earlier. Therefore, by 'capturing' a file, *SmartKill* is laying a trap for itself next time that it scans the disc.

In fact, given that *SmartKill* does not actually remove the infection from 'captured' files, and has also lost the original file type information, you're much better off getting *SmartKill* to delete any infected files and then re-installing everything from that backup that you kept (didn't you?), although nothing can disguise the fact that *SmartKill* is way behind *Killer* in this area.

What of those other features that *SmartKill* boasts? One of these – the checksum – is potentially useful. This compiles a list of checksums for every file on the disc, and enables *SmartKill* to tell you if any files have been altered or deleted. This isn't quick, but may show up any virus activity; look for changing *!Boot* files in particular.

The other features are a lot less impressive. For instance:

- *SmartKill* can 'inoculate' a disc by writing a file the size of the free space onto the disc. The idea is that no extra files can be written to the disc, nor can files be expanded. Bluntly, this doesn't work, because the ADFS format has a lot of 'wasted' space associated with each directory which it will fill with small files. The *Icon* virus spread merrily across my 'inocu-

lated' hard disc, and many others would too. In fact, this feature is worse than useless, because it gives a false sense of security.

• You can activate 'protection' in *SmartKill* which will alias a number of commands to block loading of modules. This is appallingly primitive – it just flatly refuses to load *any* module. Moreover, if you turn it off it does not restore the original aliases, which means that if you do this on a machine running *VProtect*, it becomes crippled.

• *SmartKill* displays a random 'handy hint' each time that it starts; unfortunately, as it doesn't re-seed the random number generator, this is always hint number three. I got heartily sick of hint number three after a while.

• *SmartKill* will perform a memory scan for viruses. All this does is scans through the active tasks and kills any suspicious ones – this of course doesn't work on RISC OS 3.5+ anyway. Furthermore, despite the fact that *SmartKill* claims to recognise the *Thanatos* virus, it totally ignored the task 'Thanatos' sitting in plain view on the Task Manager. *SmartKill's* event monitor also happily reported this task starting up, but *SmartKill* didn't bat an eyelid. Mind you, the event monitor frequently gave a wrong display, so perhaps this was sensible of *SmartKill*.

• *SmartKill* is written in BASIC, and the source can be hacked out of memory really easily. If I can do it, so can any virus writer.

Some of the above problems display a surprising lack of technical knowledge. Virus protection is a very technical business, and I wouldn't trust it to a software writer who believes that you can 'inoculate' a disc by writing a large file to it.

VZap

VZap is a Shareware program written by Paul Vigay. Although one virus is commonly known as the *Vigay* virus, Paul vehemently denies all knowledge of (the *!Help* files of early versions of *VZap's* predecessor *Guardian* make interesting reading for followers of this debate). Registration of *VZap* is only £5 and updates are free.

VZap did better than *SmartKill* at keeping viruses out of memory. One variant of *Icon* slipped past it, as did *BooHoo, dratsab, fcodex, Jester, Poltergeist, SystemUtils, Tanatos, MyMod, Parasite* and *CeBIT*. It also crashed while trying to remove *Link*. The other viruses tested were successfully stopped.

VZap scanned a clean disc in 2 minutes 10 seconds. It didn't multi-task but, when scanning for viruses, this is probably a good thing. When scanning an infected disc, *VZap* will clean up any infections it finds, which it appeared to manage successfully. Unfortunately, like *SmartKill*, its library is small. It cleared up infections of *Icon, Extend* and *Module*, but missed *BBCEconet, Jester, Parasite* and *SystemUtils*.

VZap really doesn't do much more that *SmartKill*, but it has fewer pretensions and – at 192K – is very compact. It also does pretty much what it claims; it does kill the viruses that it says it should. Like *SmartKill* it's not happy killing tasks on RISC OS 3.5 or 3.6, and actually crashes the machine if the *Icon* virus is loaded on these versions of the OS.

Conclusion

If you're interested in virus protection, join the Pineapple virus protection scheme and buy *Killer*. Accept no alternatives. I'm all in favour of competition in the Acorn market, but neither *SmartKill* nor *VZap* currently recognises a respectable number of viruses. If you're a complete miser you might choose *VZap* on the grounds of money, but don't complain to me when *SystemUtils* invades your system. *SmartKill* is I suppose preferable to sticking leeches on your hard disc, but sadly there's not much else going for it. AU

Questions about viruses

Q: *I only ever use commercial software and cover discs from magazines. Am I safe from viruses?*

A: No – though you'd be unlucky to catch one, as these discs are normally checked well for viruses. There's never been one on the cover of Acorn User yet, for instance. However, at least one software company sent out a batch of infected discs with a commercial product, and anyone is susceptible to new viruses.

Q: *I thought the Archimedes was practically immune to viruses?*

A: So Acorn used to claim. With a ROM-based operating system, it is immune to many of the tricks that viruses play on other OSs – it is possible to do a 'clean start' on RISC OS easily. However, many aspects of RISC OS are vulnerable, and Archimedes viruses have been written to take advantage of this.

Q: Are school machines particularly vulnerable?

A: They can be. Many viruses spread easily over a network, and on a school network it can be hard to control what software ends up in floppy disc drives. Regular scanning, and permanent use of a monitoring program will help, though.

Q: Can I catch a virus over e-mail?

A: Not directly - e-mail is text and cannot itself be run. A program sent over e-mail may contain a virus, but in order for the virus to be run the program would have to be decoded, which is a separate action from receiving the e-mail and is one you perform explicitly. Be very careful as the Internet gets more automated, though. Already, ArcWeb will Filer_Run files that it downloads, with the consequence that viruses contained (for instance) within archives may be run simply by downloading the archive. If you are going to download many files this way, install virus protection. Programs on the Net are usually virus checked, but there are no guarantees.

Q: Can I catch a PC virus if I have a PC card?

A: Yes, but only on the PC partition. It will not spread to RISC OS. The RISC OS virus killers will not remove it either – you will need to install a PC virus-killing program. Of course, if the PC virus is one that wrecks disc drives or other hardware, it may be able to do that on your system.

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT) Carriage included except where indicated

CD-ROM



The following CD-ROM's are Multi-Session, PhotoCD, CD-DA, White Book compatible & include a cable & driver for CDFS 2.20

Internal Drives

4x Speed ATAPI (IDE) (Tray) £130
Above requires RiscPC/A7000 with RiscOS3.5 or later.
4x Speed SCSI (Tray) XM-5301 £200
The above CD-ROM drive can be used in tower mode!
4.4x Speed SCSI (Tray) DR-U124X £240
PCW Verdict - 'It's extremely quick, and a bargain.'
6.8x Speed SCSI (Tray) 135ms £Call

External CD-ROM Drives

2x Speed SCSI (Tray) 275ms £180
4x Speed SCSI (Tray) 190ms £240
4.4x Speed SCSI (Tray) 150ms £280

SCSI cards

Morley uncached SCSI card	£130
Morley cached SCSI card	£169
Cumana SCSI II card	£165
PowerTec SCSI II card	£170

Above are suitable for A300, A400, A3000 (Ext+£25), A540, A5000 and RiscPC. HCCS card not suitable for RiscPC.

Hard Discs

IDE Bare Drives		SCSI Bare Drives	
635Mb 12ms	£150	540Mb 12ms	£145
850Mb 12ms	£Call	730Mb 11ms	£190
1Gb	£Call	1.08Gb 12ms	£280

Above are 3½" bare drives only. Please add the relavent accessories from below. Drives are Connor or Quantum. ForA3000/A3010 hard discs see Hard Card section below.

Syquest Removable SCSI Drives

Internal Drives		External Drives	
EZ135Mb Syquest	£Call	EZ135Mb Syquest	£199
(Above includes cartr.)		(Above includes cartr.)	
105Mb Syquest	£150	105Mb Syquest	£210
270Mb Syquest	£259	270Mb Syquest	£329
Syquest Cartridges			
EZ135Mb Cartridge	£20	105Mb Cartridge	£43
		270Mb Cartridge	£49

Hard Disc Interfaces/Accessories

50-50C SCSI Cable	£10	25-50 SCSI Cable	£10
SCSI II-50 Cable	£25	SCSI Terminator	£10
5¼-3½ open adapt	£10	5¼-3½ HD adaptor	£12
IDE Accessories		**SCSI Interfaces**	
IDE interface	£79	Morley UnCached	£130
2nd Hard Drive Kit	£15	Morley Cached	£169
External case/PSU	£79	Cumana SCSI II	£165

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 20 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.

New CD-ROM! £34+VAT
Contains over 2000 ClipArt files, each in Draw, ArtWorks & EPS formats + other demos.

Floppy discs £8 + VAT each
Single Floppy disc subjects available (one disc per subject)

1 General	11 Tools
2 Transport	12 AnimalsGB
3 Costumes	13 Chem Signs
4 Entertainment	14 Fire/Emerg Sn
5 Bugs 2 Slugs	15 Hazard Signs
6 Road Signs	16 Safety Signs
7 Sports Equip	17 Xmas1
8 Sports Figures	18 Xmas2
9 Dinosaurs	19 Xmas3
10 Symbols	20 Xmas4



Now available on CD-ROM

TopicArt catalogue available. £1.50 Inc VAT/p+p (cheques only)

New Machines

New Acorn Computers

All RiscPC's include 1yr on-site maintenance. **0% finance available, ring for details.** We operate Acorn Assist for teachers & academics. **For PC 486 Card add £99+VAT to following prices.**

Acorn A7000 (32MHz ARM7500)

Network or hard disc versions, podule slot, free SIMM skt

A7000 2MNET + AKF60	£892
A7000 2MHD425 + AKF60	£935
A7000 4MHD425 + AKF60	£1020

RiscPC600 (33MHz ARM610)

Hard disc, backplane not fitted, free SIMM & VRAM slots.

4MHD425 + AKF60	£1148
4MHD425 + AKF85	£1426

RiscPC700 (40MHz ARM710)

Hard disc, 2 or 4 podule slots, one free SIMM socket.

5MHD425 + AKF60	£1360
5MHD425 + AKF85	£1638
10MHD850 + AKF60	£1692
10MHD850 + AKF85	£1970

Add £111 to above for 2X CD-ROM

20/20 Finance

on Acorn Systems (0%APR)

20% deposit (min) and 20 interest free monthly payments. Available subject to status. Ring for details.

CD-ROM Drive Options

Acorn 2x CD-ROM Drive (IDE)	£111
4x CD-ROM Drive ATAPI (IDE)	£120
4x Speed SCSI (Tray)	£300
4.4x Speed SCSI (Tray)	£340

Above SCSI CD-ROM's include Morley uncached SCSI card, driver and cables. Add £39 for SCSI 2. Above prices only apply when purchased with an A7000 or RiscPC.

RiscPC Multimedia CD-ROM Pack

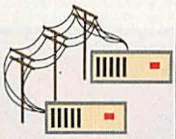
Includes 25W stereo speakers, Hutchinsons Encyclopedia & The RiscDisc Vol.1 together with one of the following CD-ROM drives.

4X Speed ATAPI CD Pack £200
The above can only be used on RiscOS 3.5 or later.
4X Speed SCSI CD Pack £390
4.4X Speed SCSI CD Pack £430
The SCSI Pack includes a Morley Uncached SCSI Card. Add £40 extra for Cumana SCSI 2 Card.

QuickLynk

New Product

Software only	£28
With 5m Local Cable	£34
With 10m Local Cable	£39



QuickLynk allows you to automatically access another Acorn RiscOS computer remotely using the serial port via modems or locally using a cable to connect the two computers. Each computer can be configured to allow access to any attached filing system device eg ADFS, IDE, SCSI, CDFS, etc. Once connected, files can be transferred to/from the remote computer. Other features include password access, auto dialler with phone book and chat mode to send messages to remote computer/user. Transfer rates up to 1900 bytes/s can be achieved with older computers, eg. A410, A3000, peaking at 11400 bytes/s on the RiscPC range. The transfer rate is limited by the speed of the serial port. Requires RiscOS 3.10 or greater.

Special Offers

(Whilst stocks last)

A3010 (2Mb RAM)

With Action Pack comprising, Zool, StartWrite and other demos.

£180+VAT

For AKF53 Monitor add **£235+VAT**

Carriage is included on above.

Mail Order - 0161-474 0778 (All prices exclude VAT) Carriage included except where indicated

A3010 Series

A3010 Action Pack 2Mb RAM	£180
A3010 Early Years 2Mb RAM	£210

Add £250 to A3010's for AKF53 Monitor.
Carriage £6+VAT on A3010 systems.

RiscPC Upgrades

Microsoft Windows '95 (CD-ROM)	£70
16 bit Sound Card (ESP)	£60
2nd Slice Case Upgrade (Carr. £6+VAT)	£99

RiscPC Cards

PC486SX33	£199
PC486DX2-66	£249
PC486DX4-100	£299
PC5x86-100	£499

Trade-In discounts are available on 486SX33 cards. Please ring for further details.

Memory Upgrades

RiscPC Memory, please ring to confirm prices

4Mb SIMM	£85	8Mb SIMM	£165
16Mb SIMM	£340	32Mb SIMM	£650
1Mb VRAM	£100	2Mb VRAM	£160
1-2Mb VRAM Upgrade (exchange)			£100
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1-2Mb RAM	£55	2-4Mb RAM	£90
1-4Mb RAM	£129		
A3010 Memory			
1-2Mb RAM	£40	2-4Mb RAM	£105
1-4Mb RAM	£145		
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2-4Mb RAM	£89		
A5000 Memory			
2-4Mb RAM	£89	4-8Mb RAM	£199
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4-8Mb RAM	£199		

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Ilyama MF-8617E 17" 0.26dp M/Scan	£549
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Older computers will require an adaptor	£12

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Add £40 to above printers for TurboDriver

I³ Networking

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A3020/A4k EtherLan 201 10BaseT	£135
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RiscPC/A7k EtherLan 602 10Base2/T	£105

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Psion 3a (1Mb)			£270
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The above modem also has voice facility	
28k8 Sportster Fax/Modem Bundle	£265
V.34+ Courier Fax/Modem & cable only	£345

Sportster Modems

14k4Vi Sportster Fax/Modem & cable only	£115
The above modem also has voice facility	
28k8 Sportster Fax/Modem & cable only	£190
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See top of page for other hard discs.

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Add £2 Carr to above (£4 for Acorn books)

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Offer of the Month

170Mb 2.5" IDE Hard Drive

Suitable for A3010/3020/A4

£120 & Vat (inc Cable)

£189 & Vat with A3010/3000 Interface

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HP Deskjet 660C	£325.00	e	£381.88
Canon BJC600	£345.00	e	£405.38
Canon BJC4000	£235.00	e	£276.13
Canon BJ200ex	£195.00	e	£229.13
Canon BJ230ex	£ POA	e	£ POA
Canon BJ10sx	£159.00	d	£186.83
Epson Stylus 800+	£189.00	e	£222.08
Epson Stylus Colour	£365.00	e	£428.88
HP Laserjet 4L	£385.00	e	£452.38
All printers supplied with leads			
Turbo Drivers HP	£38.00	b	£44.65
Turbo Drivers Canon	£38.00	b	£44.65
Turbo Drivers Epson	£38.00	b	£44.65
Acorn 1.28c Printer Drivers	F.O.C.	a	F.O.C. *With Printer*

DATA SWITCH BOXES



	Ex Vat		Inc Vat
2 Printers - 1 Computer Centronics to Centronics	£11.75	b	£13.81
2 Computers - 1 Printer Centronics to Centronics	£11.75	b	£13.81
4 Printers - 1 Computer Centronics to Centronics	£15.95	b	£18.74
4 Computers - 1 Printer Centronics to Centronics	£15.95	b	£18.74
4 Computers - 1 Monitor VGA (15 Pin HD (F)) & KB (5 Pin Din)	£18.00	b	£21.15
2 Computers - 1 Monitor EGA (9 Pin D (F)) & KB (5 Pin)	£17.00	b	£19.97
2 - 1 Way Serial 25 Pin D Type Female to 25 Pin D Type Female	£10.75	b	£12.63
4 - 1 Way Serial 25 Pin D Type Female to 25 Pin D Type Female	£14.95	b	£17.57
2 Scart - 1 Scart TV Standard Euroscart to Euroscart	£11.75	b	£13.81

INKJET REFILLS

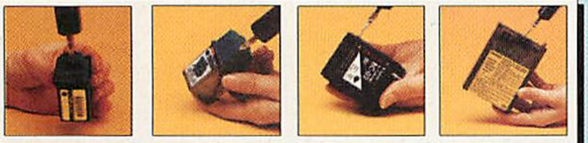
Inkjet Refills are an economical method of re-charging your existing print cartridge.

Premier Inks produce a complete range of tried & tested refills that are suitable for almost every inkjet printer on the market. The **Jet Black** refill is much darker than most original cartridges and often dries faster with less overspray, so the output looks clearer than before.

The Refills are packed in convenient ready to use one way syringes and come complete with a safety nozzle and FULL easy to use instructions covering 10 different types of the most popular cartridges. It takes little more than a couple of minutes to refill a print cartridge (whatever the make), and generally saves at least 50% off the cost of a new cartridge.

Using Refills with disposable head print cartridges in no way affects the warranty of your printer as the cartridge is considered a separate item. Also by using the PREMIER range of refills you will not lose out on the quality of print, in fact in most cases using these particular refills can improve the quality of print.

If you are unsure about using Inkjet Refills, call and speak to our staff who will be happy to send you a sample of the print out quality and a set of instructions, so that you can see the results and how easy they are to use, before you decide to buy.





	Ex Vat		Inc Vat
Single Refill Any Colour	£5.95	a	£6.99
Twin Refill Any Colour	£11.05	a	£12.99
Quad (Four) Refill Black Only	£19.57	a	£22.99
Tri-Colour Refill C/M & Y	£17.01	a	£19.99
Bulk 125ml Refill Kit Any Colour	£21.27	a	£24.99
Bulk 250ml Refill Kit C/M/Y or Black	£38.29	b	£44.99
Bulk 500ml Refill Kit Black Only	£59.57	b	£69.99
1ml Head Recovery Kit	£3.40	a	£4.00
125ml Cartridge Cleaning Kit	£3.40	a	£4.00
400ml Cartridge Cleaning Kit	£8.50	b	£9.99
TDQ Adaptor for Thinkjet Cartridge	£2.55	a	£3.00

COLOURS AVAILABLE FROM PREMIER INKS

Yellow, Brown, Gold, Silver

Premier Inks

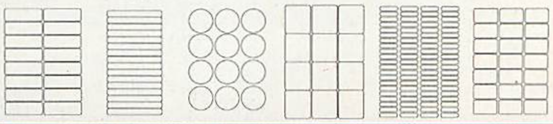
"The Professional Choice"

Specialist Laser & Inkjet Labels AVERY®

Templates for Avery Labels available for Impression. £5.00 or Free with 3 Packs of Labels.



		Ex Vat		Inc Vat
INKJET White				
J8160M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8161M 63.5x46.6mm (18 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8162M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8163M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
J8165M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£11.00	b	£12.93
J8666M 70x52mm (10 lps, 25 shts)	3.5" Disk, Face Only	£11.00	b	£12.93
J8651M 38.1x21.2mm (65 lps, 25 shts)	Mini Addresssing Labels	£11.00	b	£12.93
INKJET White *For COLOUR Printing!*				
J8365 99.1x67.7mm (8 lps, 25 shts)	Parcelling Labels	£18.00	b	£21.15
J8363 99.1x38.1mm (14 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
J8362 99.1x34mm (16 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
J8360 63.5x38.1mm (21 lps, 25 shts)	Addressing Labels	£18.00	b	£21.15
INKJET Clear				
J8560M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8562M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8563M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£18.50	b	£21.74
J8565M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£18.50	b	£21.74
LASER				
L7000 Mixed Trial Pack	Various Sample Sheets	£5.00	a	£5.88
L7159 64x34mm (24 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7160 63.5x38.1mm (21 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7160M 63.5x38.1mm (21 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7160E 63.5x38.1mm (21 lps, 250 shts)	Addressing Labels	£45.00	d	£52.88
L7161 63.5x46.6mm (18 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7162 99.1x34mm (16 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7162M 99.1x34mm (16 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7163 99.1x38.1mm (14 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7163M 99.1x38.1mm (14 lps, 40 shts)	Addressing Labels	£11.00	b	£12.93
L7163S 99.1x38.1mm (14 lps, 25 shts)	Addressing Labels	£8.00	b	£9.40
L7164 63.5x72mm (12 lps, 100 shts)	Addressing Labels	£20.50	b	£24.09
L7165 99.1x67.7mm (8 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7165M 99.1x67.7mm (8 lps, 40 shts)	Parcelling Labels	£11.00	b	£12.93
L7165E 99.1x67.7mm (8 lps, 250 shts)	Parcelling Labels	£45.00	d	£52.88
L7166 99.1x93.1mm (6 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7167 199.6x289.1mm (1 lps, 100 shts)	Shipping Label	£20.50	b	£24.09
L7168 199.6x143.5mm (2 lps, 100 shts)	Shipping Labels	£20.50	b	£24.09
L7169 139x99.1mm (4 lps, 100 shts)	Parcelling Labels	£20.50	b	£24.09
L7173 99.06x57mm (10 lps, 100 shts)	Shipping Labels	£20.50	b	£24.09
L7263 99.1x38.1mm (14 lps, 25 shts)	Addressing Florescent Yellow	£11.00	b	£12.93
L7363 99.1x38.1mm (14 lps, 25 shts)	Addressing Florescent Pink	£11.00	b	£12.93
L7630 63.5 Dia (12 lps, 50 shts)	White Circular Labels	£13.00	b	£15.28
L7651 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Labels	£8.00	b	£9.40
L7651H 38.1x21.2mm (65 lps, 100 shts)	Mini Addressing Labels	£20.50	b	£24.09
L7654 76.2x46.4mm (12 lps, 14 shts)	Video Spine & Face Labels	£11.00	b	£12.93
L7671 76.2x46.4mm (12 lps, 25 shts)	Video Face Labels	£11.00	b	£12.93
L7674 145x17mm (16 lps, 25 shts)	Video Spine Labels	£11.00	b	£12.93
L7655 89x42mm (12 lps, 25 shts)	Audio Cassette Labels	£11.00	b	£12.93
L7656 46x11.11mm (84 lps, 25 shts)	35mm Slide Labels	£11.00	b	£12.93
L7664 70x71.9mm (8 lps, 25 shts)	3.5" Diskette Wrap Over	£11.00	b	£12.93
L7664H 70x71.9mm (8 lps, 100 shts)	3.5" Diskette Wrap Over	£20.50	b	£24.09
L7665 72x21.15mm (24 lps, 25 shts)	Mini Data Cartridge Labels	£11.00	b	£12.93
L7666 70x52mm (10 lps, 25 shts)	3.5" Diskette Face Only	£11.00	b	£12.93
L7667 133x29.61mm (9 lps, 25 shts)	Standard Data Cartridge	£11.00	b	£12.93
L7670 63.5 Dia (12 lps, 25 shts) FY	Florescent Yellow Circular	£11.50	b	£13.51
L7680 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Gold	£17.00	b	£19.98
L7690 38.1x21.2mm (65 lps, 25 shts)	Min Addressing Silver	£17.00	b	£19.98
L7170 134x11mm (24 lps, 25 shts)	Eurofolio/Filing Labels	£11.00	b	£12.93
L7171 200x60mm (4 lps, 25 shts)	Lever Arch Labels	£11.00	b	£12.93
L7172 100x30mm (16 lps, 25 shts)	Ring Binder Labels	£11.00	b	£12.93
LASER Mini-Sheets				
L2186 69.9x50.8mm (4 lps, 40 shts)	3.5" Diskette Face Only	£7.50	b	£8.81
L2163 101.6x50.8mm (4 lps, 40 shts)	Parcelling Labels	£7.50	b	£8.81
L2162 101.6x33.8mm (6 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2160 66.8x25.4mm (8 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2164 50x14mm (28 lps, 40 shts)	Suspension File	£7.50	b	£8.81
LASER Clear				
L7551 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Transparent	£15.00	b	£17.63
L7562 99.1x33.9mm (16 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7562S 99.1x33.9mm (16 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7563 99.1x38.1mm (14 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7563S 99.1x38.1mm (14 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7565 99.1x67.7mm (8 lps, 50 shts)	Parcelling Transparent	£25.00	b	£29.38
L7575S 99.1x67.7mm (8 lps, 25 shts)	Parcelling Transparent	£15.00	b	£17.63
LASER Business Cards				
L7413 90x50.8mm (10 lps, 25 shts)	Business Cards, Micro Perforated	£15.00	b	£17.63
LASER Name Badges				
L7418K 86.6x55.5mm (8 lps, 3 shts, 10 Holders)	Name Badge & Holders	£17.00	b	£19.98
L7418 86.5x55.5mm (8 lps, 25 shts) Refill Pk	Name Badge	£13.50	b	£15.86
LASER Postcards				
L7421 139.37x97.29mm (4 lps, 25 shts)	Postcards	£16.00	b	£18.80



INKJET CARTRIDGES

	Ex Vat		Inc Vat
HP51626A DJ Double Life	£17.02	a	£20.00
HP51633a DJ Portable Black	£15.25	a	£17.92
HP51625A Tri Colour Cartridge	£20.85	a	£24.50
HP51640A HP1200c Black	£17.00	a	£19.98
HP51640? HP1200c C/M or Y	£20.20	a	£23.74
HP51604A Thinkjet/Quietjet	£12.00	a	£14.10
HP51639A Paintjet XL Black	£14.95	a	£17.57
HP51606C Paintjet Tri Colour	£20.20	a	£23.74
HP51606A Paintjet Black	£22.20	a	£26.09
HP51606R Paintjet Red	£23.00	a	£27.03
HP51606B Paintjet Blue	£23.00	a	£27.03
HP51606Y Paintjet Yellow	£23.00	a	£27.03
Epson Stylus 800 Black	£8.00	a	£9.40
Epson Stylus Colour - Colour	£25.00	a	£29.38
Epson Stylus Colour - Black	£12.00	a	£14.10
Olivetti JP150 Black	£14.60	a	£17.16
Canon BC-01 Black	£14.00	a	£16.45
Canon BC-02 Black	£15.00	a	£17.63
Canon BJC600 Black High Cap	£8.00	a	£9.40
Canon BJC600 C/M or Y	£6.20	a	£7.29
Canon BJC4000 BC20 Black	£21.00	a	£24.68
Canon BJC4000 BCI21 Black	£7.00	a	£8.23
Canon BJC4000 BCI21 Colour	£12.00	a	£14.10
Canon JI-20c Integrex Colour	£18.00	a	£21.15
Canon JI-25B Integrex Black	£10.02	a	£11.77
Canon BJ300/330 Black	£11.50	a	£13.51
Canon BJC800 Black	£13.50	a	£15.86
Canon BJC800 C/M or Y	£17.00	a	£19.98

Upgrades & Repairs

We can Fit any upgrade listed on these pages, or fix most problems while you wait in our showroom. In most cases we don't charge for fitting any of the products we supply.

Low repair costs for Acorn/PC or printers and monitors. Call for Quote.

WINTUNER & INIGUARD

Wintuner is a program that has been designed to get the best speed out of the Windows environment. It is ideal for machines that are underpowered such as the Risc PC with the 486 Card. Fine tunes the Windows environment.

Iniguard is a program which is designed to stop Windows becoming corrupt. A 3 stage recovery program and a master backup of ALL the important Initialisation files and the Autoexec.bat and Config.sys files.

Highly Recommended.

Wintuner & Iniguard	£21.27	a	£24.99

FREE

Mouse Mat with any order over £20

Quote ref: MMKCS

DUST COVERS

	Ex Vat		Inc Vat
PC 2 Piece Dust Cover	£6.00	a	£7.05
PC Mini Tower Dust Cover	£3.56	a	£4.18
PC 14" Universal Monitor Cover	£3.56	a	£4.18
PC 102 Key UK Keyboard Cover	£3.56	a	£4.18
Acorn A5000 All in One Dust Cover	£6.00	a	£7.05
Acorn A4000 All in One Dust Cover	£6.00	a	£7.05
Acorn A3010/3020 Dust Cover	£4.55	a	£5.35
Risc PC (1 Stack) Dust Cover	£6.00	a	£7.05
Small 80 Column Printer Cover	£3.56	a	£4.18
Large 132 Column Printer Cover	£6.40	a	£7.52
HP Deskjet 500/550/560 Cover	£3.56	a	£4.18
Canon BJ10 Dust Cover	£3.56	a	£4.18
Canon BJ200 Dust Cover	£4.56	a	£5.36
Canon BJC600 Dust Cover	£4.56	a	£5.36

LASER TONER

	Ex Vat		Inc Vat
Canon LBP-8 IV	£70.00	d	£82.25
Canon LBP-8 III	£59.00	d	£69.33
Canon LBP-4U	£52.00	d	£61.10
HP Laserjet III/IIID	£52.00	d	£61.10
HP Laserjet IIIP/IIP	£48.00	d	£56.40
HP Laserjet IIISI/4SI	£95.00	d	£111.62
HP Laserjet 4/4M/4MP/4P	£70.00	d	£82.25
HP Laserjet 4L/4ML	£48.00	d	£56.40
Qume Laser Direct (3 Sets)	£99.00	d	£116.33

RIBBONS

B=BLACK RIBBON
C=COLOUR RIBBON

			Ex Vat		Inc Vat
Amstrad DMP2000/3000	B	2482RN	£2.80	a	£3.29
Amstrad DMP4000	B	2426RN	£3.66	a	£4.30
Amstrad LQ5000	B	2886DN	£6.10	a	£7.18
Amstrad PCW8256/LQ3500	B	2944DN	£2.85	a	£3.35
Amstrad PCW9512	B	2949FN	£3.38	a	£3.97
Brother M1009/1024/1109/1209	B	2412FN	£3.90	a	£4.58
Brother M1818/1824L/1924L	B	2905DN	£4.88	a	£5.74
Citizen 120D/LSP10/Swift 24/9	B	2939DN	£2.85	a	£3.35
Commodore MPS1220/1230	B	2843RD	£4.50	a	£5.29
Commodore MPS1500/1550	B	2863RDB	£6.75	a	£7.93
Epson LQ100	B	2986RD	£4.10	a	£4.82
Epson LX100	B	2999RD	£3.83	a	£4.50
Epson LQ200/400/500/800/850	B	2477DN	£3.45	a	£4.05
Epson LQ1000/1050/1070/1170	B	2478DN	£4.10	a	£4.82
Epson FX/MX/RX80/FX/LX800	B	2273FN	£2.90	a	£3.41
Epson FX/MX100/FX/MX1000	B	2320FN	£3.36	a	£4.30
Epson LX80/86/90	B	2454FN	£2.12	a	£2.49
Fujitsu DL3300/3400, DX2200	B	2849DN	£3.75	a	£4.41
IBM 4207/4212 Proprinter X24	B	4846FN	£3.88	a	£4.56
Mannesman Tally 80/81	B	2698MS	£3.90	a	£4.58
NEC Pinwriter P220/P2+	B	2844RD	£3.03	a	£3.56
Oki ML182/183/192/193/195	B	2455RN	£3.17	a	£3.72
Oki ML320/321/380/390/391	B	2874RD	£3.32	a	£3.90
Panasonic KX-P1123/1124/1140	B	2904RD	£3.46	a	£4.07
Panasonic KX-P1080/1180/90	B	2905RN	£2.89	a	£3.40
Panasonic KX-P1524/1540/1624	B	2953RD	£4.55	a	£5.35
Panasonic KX-P2123/2124/2180	B	2984RD	£5.75	a	£6.76
Seikosha SL90/92/95/96	B	2920DN	£5.70	a	£6.70
Star LC10/20/100	B	2861FN	£2.29	a	£2.69
Star LC200	B	2954FN	£3.00	a	£3.53
Star LC24-10/20/200	B	2868DN	£2.86	a	£3.36
Star ND/NL/NR/NX10, NB24-10	B	2761DN	£3.85	a	£4.52
Taxan Kaga KP810/815/910/915	B	2223RN	£3.14	a	£3.69
Citizen 224/240/Swift 24-9	C	2964DN	£12.81	a	£15.05
Commodore MPS1500/1550	C	2863RDC	£9.38	a	£11.02
Panasonic KX-P2123/2124/2180	C	2985RD	£10.63	a	£12.49
Star LC10/20/100	C	2869FN	£6.00	a	£7.05
Star LC200	C	2959FN	£9.78	a	£11.49
Star LC24-10/20/200	C	2952DN	£9.63	a	£11.32

Special Offer — **Startwrite** Word Processor £17.02 & Vat

Special Offer — **Champions** 4 Games in 1 £12.72 & Vat

Special Offer — **240watt Speakers** Amplified Mains Powered £58.00 & Vat

Special Offer — **Joystick Controllers** for A3020/4000/5000 £20.00 & Vat

Special Offer — **386 PC Cards** for A3020/4000 £99.00 & Vat

Special Offer — **Pinpoint** Database Sofware £30.00 & Vat

All above, while stocks last.

CABLES & ADAPTORS

		Ex Vat		Inc Vat
Mains Lead 3 Pin Moulded 5 amp	Computer or Printer Power Lead	£3.70	a	£4.35
Mains Lead Extension M-F	Computer to Monitor Power Lead	£3.70	a	£4.35
4 Gang Extension	1 Mains Socket converted to 4, Fused	£6.50	b	£7.64
Parallel Printer Cable 1.8M	Normal Printer Cable PC/Acorn/Atari etc	£2.55	a	£3.00
Parallel Printer Cable 3M	Normal Printer Cable PC/Acorn/Atari etc	£4.55	b	£5.35
Parallel Printer Cable 5M	Normal Printer Cable PC/Acorn/Atari etc	£6.50	b	£7.64
Bi-Directional Parallel Printer Cable	Fast Data Transfer Cable	£11.00	a	£12.93
Centronics - Centronics Cable 2M	Switch Box Cable	£4.28	a	£5.03
Centronics - Centronics Cable 3M	Switch Box Cable	£6.50	a	£7.64
Serial Cable 2M 25 Pin M-F	All Pins Connected/Printer Cable	£4.28	a	£5.03
Serial Cable 5M 25 Pin M-F	All Pins Connected/Printer Cable	£8.50	b	£9.99
Laplink Cable 1.5M 25&9F-25&9F	Data Transfer Cable Null Modem (X-Over)	£8.50	a	£9.99
Midi Leads (Pair)	Music Data Transfer Cables 5 Pin Din	£8.00	a	£9.40
Phono Leads (Pair)	2xPhono Transfer/Extension Cable	£3.50	a	£4.11
Phono to Stereo Jack Convertor	3.5mm Stereo Jack to 2xPhono Plugs	£3.00	a	£3.53
VGA/SVGA Monitor Extension Cable 2M	15 Pin HD M-F	£6.50	a	£7.64
Keyboard Extension Cable 2M	Curly 5 Pin Din M-F Standard PC Keyboard	£6.50	a	£7.64
Keyboard Extension Cable 2M PS2	Curly PS2/Risc PC M-F Keyboard Ext	£6.50	a	£7.64
Mouse Extension Cable 2M	9 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Extension Cable 2M PC	15 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Splitter	Allows the Use of 2 Joysticks on a PC	£8.50	a	£9.99
A3010/3020/4000/5000 - Scart Lead 1.5M	15 Pin HD D Type to Euroscart (Not Sony)	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKI	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKII	15 Pin HD D Type - 9 Pin & Phono Leads	£8.50	a	£9.99
A3010/3020/4000/5000 - AKF17 & AKF30	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
SCSI 25 Pin D - Centronics	SCSI Interface to External Box/CD or HD	£12.00	b	£14.10
SCSI 50 Way IDC Ribbon Cable 1M	Internal SCSI Cable (Can be Custom made)	£ ASK	a	£ ASK
SCSI Centronics to Centronics 1M	External Daisy Chaining/Switch Box Cable	£14.00	b	£16.45
IDE 40 Way Cable 15" for 2 Hard Drives	Internal for 2x3.5" IDE Hard Drives or CD's	£3.00	a	£3.53
IDE 40 Way Sub Miniature Cable	Internal Cable for 2.5" IDE Hard Drive 6cm	£8.50	a	£9.99
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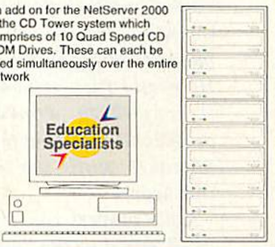
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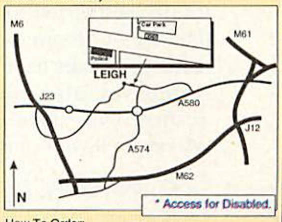
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A fairy tale success

Karen Peach talks to Paul Patterson, Professor of Composition at the Royal Academy of Music, about the influence Sibelius has had in his work and on his profession.

Once upon a time, not that long ago, in a studio overlooking Highgate, there was a composer who used to sit at his piano with manuscript paper and pencil writing music. He would then send the score to his publisher which would be hand-copied, proof-read and re-copied if there were any mistakes, until the score was eventually finished.

This process continued for many years until one day the composer read about a computer program from the distant and mythical land of Cantabridgia *which was designed to free composers from the tyranny of the traditional quill and parchment. This is the story of that composer, of his travels through academia with the computer program* Sibelius *and of a young woman dressed in scarlet who has a grandmother with rather large teeth...*

Paul Patterson, Professor of Composition at the Royal Academy of Music, describes himself as 'one of the pioneers' when it comes to using *Sibelius*. Soon after receiving a circular from the Finn brothers at Sibelius Software, Paul arranged for Jonathan Finn to give a lecture at the Academy. Impressed by what he heard Paul bought a system for himself and also persuaded the Academy to invest in an Acorn Risc PC and *Sibelius* software.

Paul admits that at the time he thought of Acorn computers as 'yesterday's technology' but since using them he has totally converted and convinced others likewise. A 'domino effect' has resulted – many professors have bought an Acorn for themselves after using *Sibelius*, and the Academy has since abandoned all other systems in favour of it.

Compulsory part of the curriculum

Sibelius 7 is a now a compulsory part of the curriculum for composition students at the Royal Academy. 'I can get a student working on *Sibelius* within half and hour and we only really need to give them a couple of lessons because it is so user-friendly,' Paul explains.

Many of the music students come to the Academy with limited computing experience, and find the thought of using a composition package a rather frightening prospect; quite understandable when previously students had difficulty in producing anything after learning other packages for 18 months, mainly due to the many complicated commands required to work on them.

This is where *Sibelius* is so different: 'with this you just click and point and get marvellous results instantly,' says Paul. Students find that they can work on their own pieces very quickly and Paul sees this as being psychologically very good. Postgraduate Richard Dubugnon has been learning *Sibelius* since September; he hadn't used a computer before and although he was afraid at first he has found *Sibelius* easy to use and picked it up very quickly.


Julie Walters as Little Red Riding Hood.

He expresses some reservations though, describing it as his '*need* for pen and paper'. He therefore writes the score by hand first and then inputs it into *Sibelius*; from this he can listen and print his work out. Although certain composers prefer composing the old way, like Richard using *Sibelius* primarily as a printing program, Paul sees this as just the beginning. He thinks Richard would use *Sibelius* in more ways if he had his own system at home and other composers would probably convert if they realised how much time can be saved by composing on screen using *Sibelius*.

Another great advantage when using *Sibelius* for teaching is that students can actually hear their compositions immediately, *Sibelius* gives a composer the flexibility to try things out and alter them.

'When I'm teaching orchestration rather than suggesting things and then leaving the students to wait a year or two to hear the music, there is instant playback and they can see if my suggestion is actually a good one', Paul says. Previously the students had to rely on a teacher's experience which was not as satisfying as actually hearing the music and being able to experiment for themselves. Similarly, first night nerves have become a thing of the past since using *Sibelius*, as Paul explains: 'I knew exactly what it was going to be like, so the first performance was more relaxing than usual'.

Floppy discs instead of manuscript paper

If popularity can be measured by demand the time-table in the Music Processing Room speaks for itself. *Sibelius* is 'a victim of its own success' at present with 60 – 70 students and professors wanting to use the three systems at the Academy. Rationing time was the only way for the systems to be shared equally among those wanting to use it.

Sibelius is a main talking point at the



Royal Academy. Other departments are also beginning to see the potential and usefulness of *Sibelius*. Joanna Ive, a third year post-graduate, is even helping to teach professors from other departments who are beginning to see the merits of *Sibelius* and are now wanting to learn all about it.

Nimrod Borenstein, another composition student, has been learning *Sibelius* for a year and a half; he now helps to teach other students and also copies music for professors to make some pocket money.

Schemes are in hand to get another system which is obviously desperately needed to keep up with the demand. Acorn has already given the Academy two machines and in return the Academy is now providing an Acorn developer with recordings of instruments to be digitised and used in the development of a sound chip for the future.

An indication of the status *Sibelius* now has at the Royal Academy of Music is the fact that Jonathan Finn has been given the title of Visiting Professor of Music Notation Technology. He gives a lecture once a term and in this master class, students and professors alike get the chance to hear 'the big guru' talk. Jonathan is also there to help them with any problems they may be experiencing although Paul jokingly wonders why they don't ask *him*.

New features

The more that composers are using *Sibelius*, the more they are demanding from it – this is why the relationship that has emerged between the Royal Academy and Jonathan Finn is so beneficial. Composers may see where a slight alteration could improve the program, although Paul stresses that there have *only* been one or two things, Jonathan listens and usually acts on the suggestions within 24 hours, this two way process is crucial to its development and moves *Sibelius* continually forward.

On the new version of *Sibelius 7* is a notepad, which enables composers to try out a little sketch without actually altering the score they are working on. Once it is right, it's just a case of copying it across; this will be particularly useful to those composers who 'create on screen' as Paul does.

Another unique feature on version 3 is flexitime. There are now three ways of inputting notes in *Sibelius*: the first is with the mouse, the second is step time which means inputting the notes in from a MIDI keyboard but not with the correct note lengths in real time, and the third is the new method in which the composer plays the music in time on the keyboard and the computer notates it.

'Cleverly it knows that you're playing a crotchet, a quaver or semi-quaver', Paul explains, which in itself is not a new idea, but previously problems have arisen due to humans playing music musically rather than mechanically in time to a metronome. 'With flexitime, if you slow down slightly and speed up it won't change the way it's notated. With all other systems, if you slightly play out of time, the program starts adding fractions of notes and other complicated things because it thinks that's what you're doing, rather than actually being human and slightly playing out of time'.

Another new feature is *Sibelius's* ability to play in different styles, for instance it can now swing and play jazz. In Paul's words 'it's becoming more and more humanised'.

A question of survival

For the students at the Royal Academy learning to use *Sibelius* is vital for their future. As Paul points out: 'it's going to be a question of survival. If you're going to be a professional composer I think there's no question that you have to keep up with the technology'.

Already there is one publisher who has offered to buy their composers a *Sibelius* system so that the composers can send their score in on a floppy disc. In the long run this will be a big money saver for publishers, particularly in the copying of manuscripts. Previously a score would be copied by hand and each part written out separately, *Sibelius* however produces professionally printed scores and also allows individual parts to be printed out. It will also make proof-reading quicker and easier; with hand copying there is always a chance of human error, which is virtually eliminated when using *Sibelius*.

One student, Saidi Abdul Fatah – who ironically has been sponsored by IBM to study music notation – has just landed himself a job as a copyist with the BBC, a position that he would not have been offered if he still only copied by hand. Using *Sibelius* is faster and more accurate and copyists will have to adapt to get work in this dying profession.

Performing live

The musician may also see the development of *Sibelius*, as potentially frightening, for although there may always be the desire and demand for live musicians and performances, certain aspects of their work may be accomplished just as successfully by *Sibelius*.

If we take a look at what has already happened in the music industry it demonstrates how developments in technology have gradually replaced musicians. In the 1940s and '50s a whole orchestra would be employed to play the music for a film. In the '80s, at a time when string synthesisers were coming in, the number of musicians employed to work on a film dropped to about 20. 'Electronic instruments are integrating in with live musicians, this has started really with the invention of electric organ and the bass guitar, and this seems to be a natural progression.' So is *Sibelius* the next step in this process, at a time when economic considerations are given priority it certainly is a possibility?

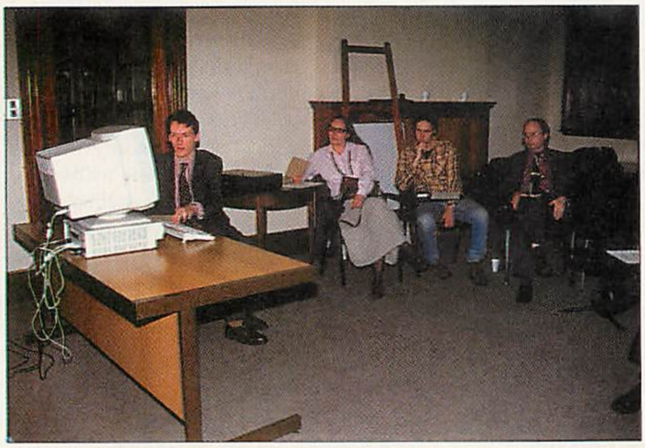
During the Festival of Contemporary



Paul Patterson in his studio at home.



So Paul how do you compose? Just like that...



Jonathan Finn gives a lecture once a term.



In the Music Processing Room.

Music at the Royal Academy of Music in March 1995 *Sibelius* gave its first public performance. The Hungarian composer Gyorgy Ligeti's music is renowned for being extremely difficult to play; as the pianist Alfred Berendel said: 'this is great music but you actually need five hands to play it'. During the festival a couple of the easier pieces were played by students, but *Sibelius* was used to play a very complicated piece which would be virtually impossible for a human to play.

'Rather than playing it through just speakers we have a Yamaha digital piano, which is like an ordinary grand piano but it's got motors under each note so with a MIDI interface the computer can make the notes go up and down.

The piano was playing the music but the computer was reading the music, so you heard the piano physically playing but it wasn't a human playing it – it was marvellous.'

On stage there was a monitor on a piano stool with a bow tie round it. Jonathan Finn switched on the computer at the beginning and switched it off at the end for which he received enormous applause. It turned out to be quite a media event with camera crews present and coverage on the television news in Holland; it even made the front page of the South China Daily. *Sibelius's* first performance was a great success.

Little Red Riding Hood

It is important to remember that hearing *Sibelius* play music is not the same as listening to a cassette or CD recording – the computer is actually reading the music as it is heard which, with the new developments, is sounding more and more as if it's a human playing.

The latest example of this is Paul's composition for Roald Dahl's *Little Red Riding Hood*. He originally wrote the score two years ago before knowing anything about *Sibelius*. The London Philharmonic Orchestra performed this at the Festival Hall on the South Bank. EMI has since produced a film, CD and cassette which has involved making several changes to the original score.

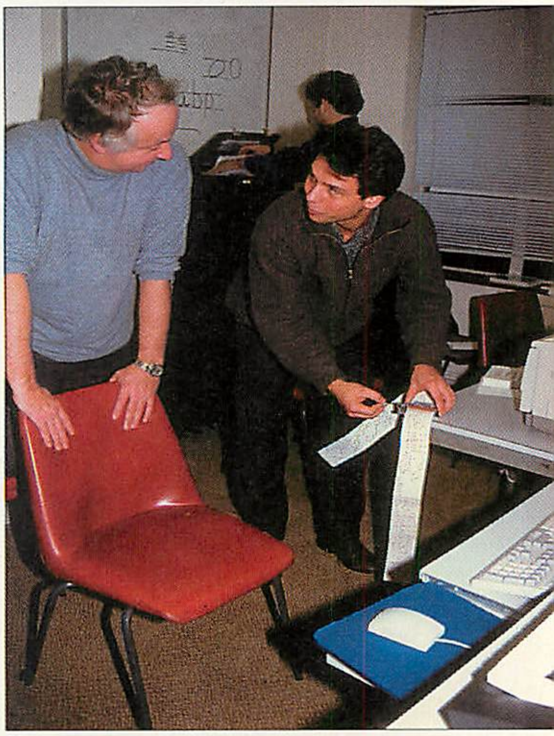
Basically more music was needed during the film to fit into the slots and also for the titles. From an original piece of 35 minutes Paul had to compose about 12 more minutes plus the title music. It's at times like this when Paul wishes he had been a *Sibelius* user when he originally composed the piece, as an alteration like this is so much easier to do.

When composing a new piece of music the composer would usually play part of it to the producers on a piano so that they could get the feel of it – they would have to use their imagination for all the different instruments. Now with *Sibelius* a composer can send a demo which virtually sounds like the real thing. Paul used *Sibelius* for composing the new title music to *Little Red Riding Hood*, sent the *Sibelius* version to the producers and they liked the sound of it so much that they decided to use exactly this version with a live flute mixed in.

Paul thinks that it stands up well against the London Philharmonic and would imagine most people listening to it just assume that it was the orchestra playing it. If you saw *Little Red Riding Hood* on television on New Year's Day I doubt that many of you even noticed.

A great aid to composition

Sibelius is proving to be a 'great aid to composition'. It has been extremely well received by composers, music professors and students alike. It saves time for the composers and money for other parts of the industry. Traditionalists may resist converting, but there is no denying that *Sibelius* is certainly influencing the industry now and will probably continue to do so. AU



And for those who prefer the old way...

Contact details

Product: Sibelius 7
Supplier: Sibelius Software
Tel: (01223) 302765
Fax: (01223) 351947
E-mail: info@sibelius.demon.co.uk

Product: Little Red Riding Hood
Supplier: 'All good record stores'
Price: Video: £10.99, CD: £14.99, Cassette: £11.99

SENLAC Computing

PO Box 304
Brighton
BN1 1LE
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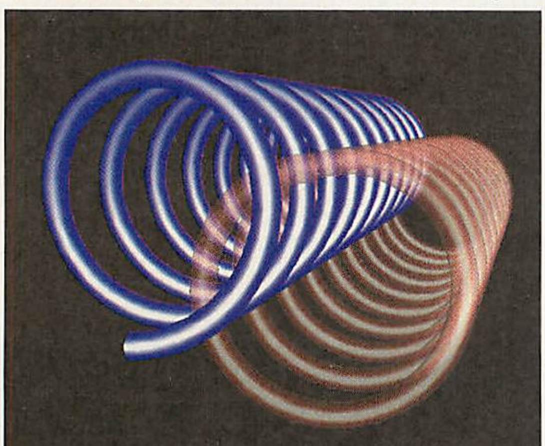
Making it more solid

Jack Kreindler and Paul Wheatley take a look at the 3D packages Merlin, Top Model and DaVinci.

3D modelling and ray-tracing have a certain lure – which tends to exceed what current software can deliver. It takes a long time and a lot of effort, but having your computer creation hanging before you on screen is enough to make many people take the necessary effort.

Acorn machines have not been as well served as other platforms (you only have to look at the incredible Babylon 5 graphics produced on an Amiga to see that) but we're catching up now with a range of new products.

Merlin (from Evolution Computer) is a complete package consisting not only of a modeller but also a ray-tracing application while both *Top Model* and *DaVinci 90* are for modelling alone. The first thing to point out is that *DaVinci*, despite having an Italian name, is the English product authored by *Aspex* while, just to confuse you, *Top Model* has been developed by the Italian software group, *Sincronia Solutioni Multimediali* (who shall be referred to as SSM from now on).



Spirals and worms are easy to create using *Top Model.*

DaVinci 90 is still embryonic and the final package should bear many more features and the *DaVinci* Project does not end with version *90*. Planned future versions, namely *DaVinci 180*, *DaVinci 270* and finally, to complete the circle, *DaVinci 360*, each will be an enhancement and more powerful than the last, resulting in a complete modelling, realisation and animation suite for the higher end user. In this way, Aspex plan to create a comprehensive 3D graphics solution while SSM have set their sights purely on the professional market, with a low end, easy to use spin off product for schools; a *Euclid* for the '90s perhaps?

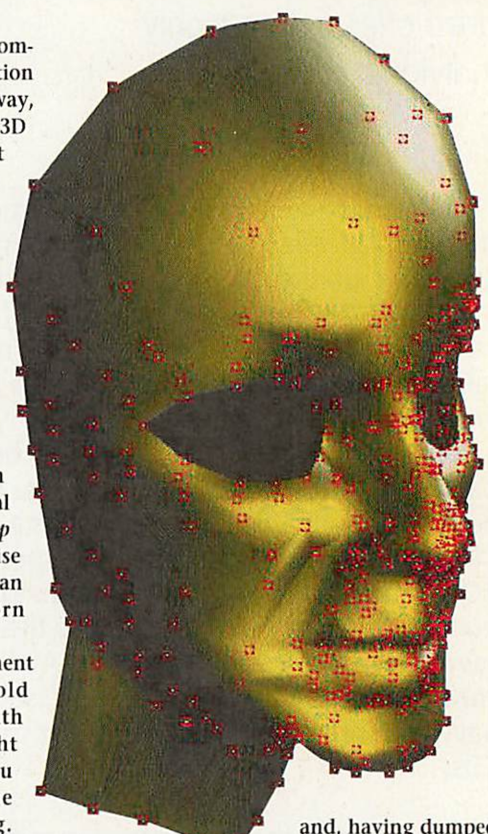
Top Model

Introducing *Top Model* is akin to how my geography teacher of bygone times would have introduced a development like London Docklands. Docklands is a housing and office development designed to revitalise an area of London with much unused potential (whatever that means). *Top Model* is aiming to revitalise not East London but rather an area flagging in the Acorn platform.

The *Top Model* environment is reminiscent of good old *Euclid* which did away with the conventional top, right and front views and gave you a real camera view of the scene you were creating. However, *Euclid* only had a few tools. Basically it was, and indeed still is, *Draw* with an extra dimension bunged in. *Top Model* is a different kettle of fish altogether.

The complexity of the program means there are dozens of icons to work your way through and, though all are very prettily designed, some are rather more abstract than others. Much squinting is required in larger screen modes as some of the sub-menu icons are small. *Appolonius PDT* did away with all this complexity using a very simple interface which 'intelligently' adapted the tools when required. Perhaps *Top Model* could benefit from the same system, or at least give options for configurable toolbars.

There is a wide selection of library models which you can load, create or modify



and, having dumped a few cubes and spheres around and illuminated the scene with spot or sunlight, the most striking feature of *Top Model* becomes apparent. Choose the zoom or rotate tools or simply hold Control and with Select or Adjust respectively and the



Who'll take the first bite at *Top Model*?

stunning speed of the program simply amazes. The speed of redraw is dependent on the level of rendering that you choose.

You can apply anything from wire frame through gouraud and phong shading, right up to a 24-bit preview render which is as fast as phong shading and yields beautiful results with transparency, reflected light and material properties all calculated. *Top Model* may be able to render scenes but this should not be confused with the photo-realistic rendering routines known as ray-tracing.

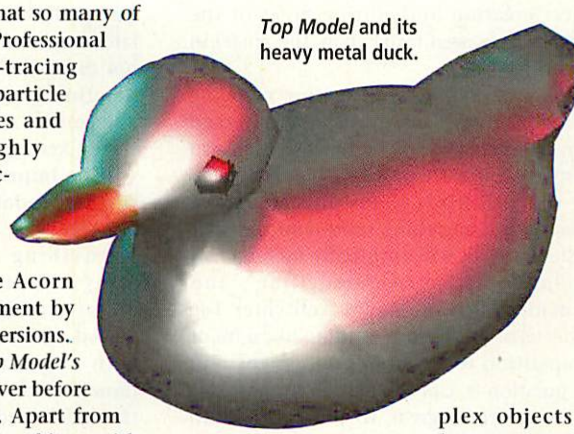
Ray-tracing could be possible on the Acorn in the next version by file exportation to the legendary *PoVRay* ray-tracer or *Merlin*, or by translation for programs on other, possibly stronger platforms like *Autodesk 3D Studio* or *Renderman*, via DXF format.

The lack of proper ray-tracing facilities as provided in the *Merlin* package is both due to the youth of the *Top Model* project and also because of the considerable lack of raw number crunching power of the FPA-less Acorn. This is of course all changing while we speak as the Simtec multiprocessor card nears official release and 160Mhz StrongARMs just round the corner.

SSM has its sights firmly set at the top, and although the manpower at present could not realistically hope to produce a *3D Studio* basher for the Acorn in the next few months, a year down the line and *Top Model* could well become what so many of us have been waiting for: Professional quality, blazingly fast ray-tracing and animation tools with particle simulation, NURBS surfaces and other bizarre and highly advanced modelling functions, are all planned, providing the multiprocessor upgrade fulfils its expectations and that the Acorn market encourages development by way of purchasing the first versions.



Fiddling around with *Top Model* can produce some nice effects.



Top Model and its heavy metal duck.

Back to here and now, *Top Model's* modelling strengths have never before been seen on this platform. Apart from the standard primitives, bezier objects with real time surface matrix distortions and manipulations can be performed. Modelling a bezier object in *Top Model* is literally like modelling a pliant blob of clay, or a perfectly obedient wire mesh. Step and repeat functions with 3D parameters allow spiralling staircases and the like to be created with great ease and all fine point editing – so important in creating a realistic scene – is aided by the powerful zoom and rotate function mentioned earlier.

One of the most powerful tools on offer is the extrusion tools which needs getting used to but once mastered are great for things like tapeworms. Your worms can be coloured, applied with 256 colour sprites and given attributes like shine, transparency or plasticity. Texture mapping is especially easy; all you do is drag the image thumbnail onto the selected object or polygons and Bob's your Uncle, you've got a worm with a paisley sock on.

If there is anything that one could rightfully criticise about the working of *Top Model* it would be that there is no way of getting out of complex redraws once they have started. Rendering and modelling is a complex business and long periods of staring at the hourglass are inevitable. All good modelling packages on other platforms allow escape from unwanted or unexpectedly long operations.

In the same area, selection of single complex objects in complex scenes takes much longer than selecting all objects; this can be tiring. One must remember, though, that this version of *Top Model* is not optimised for the latest Acorn hardware and will run on any RISC OS 3 machine. Risc PC versions will support 16-bit and 24-bit screen modes and much faster rendering times (perhaps two to three times faster). Furthermore, work on other professional features has already been started but will not be completed until the Acorn market proves its need of such high level modelling, ray-tracing and animation tools.

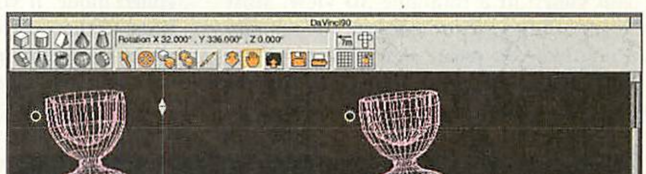
To conclude, *Top Model* is a modelling package already of a calibre unseen before on the Acorn platform with a very promising future development path, provided that both Acorn hardware and the Acorn market do their part. I am now definitely on the Acorn 3D bandwagon and cannot wait for future versions of the package, which hopefully will be of the same value for money as the first.

DaVinci 90

I should not say much about *DaVinci* at this stage as nothing is really finished in the preview version supplied. However, by the first quarter of 1996, *DaVinci 90* and possibly 180 will be completed. The program already works in 16 and 24-bit modes, and although it has a more conventional and much less fluid feel about it in



Top Model uses the single view approach with very fast redraw.



DaVinci 90 takes the standard approach to 3D modelling.

object creation and editing areas of the package, it is even faster than *Top Model* in rendering.

Gouraud shading with texture mapping and even bump mapping and reflected light can be viewed with transparency and perspective. For the price of the first package (under £50) it seems unbeatable for more simple modelling tasks, and the later versions which will eventually include ray-tracing, advanced modelling and animation facilities could well enter *Top Model* territory. There's nothing like a bit of competition to inspire development, but the question is, can the market support two such potentially great 3D programs? With the arrival of the hoped-for power it might, we'll just have to wait and see.

Jack Kreindler

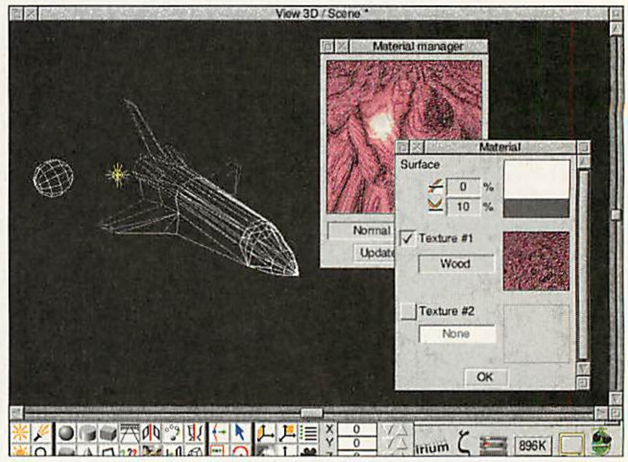
Merlin

After my first glimpse of *Merlin* I realised the Acorn 3D graphics scene had finally reached a new stage. At last you can perform high quality ray tracing using a commercial editor and tracer. Seeing the program in action as demonstrated by the author, I was convinced the program I had waited for, for so long, was finally here.

Despite my initial enthusiasm I have to admit I was quite disappointed when I first tried using Merlin for myself. Experience in 3D design has taught me that modelling packages are usually quite tricky to get into. The process of viewing and editing a three dimensional object on a 2D screen is never easy.

So I began by reading through the manual to get a feel for the program. All the package's features are described in detail, but the absence of a tutorial to introduce new users to the software is a major omission, and rather drops you in at the deep end when you start off. This would not be a problem if *Merlin's* user interface were good, but it took many attempts at object design before I could start to get to grips with the editor.

The program is based on a single viewing window which can contain one of three plan views, or a rotatable 3D view. Most design utilities are provided on the toolbox which lets you create new objects, rotate and manipulate them, and gives control over your view of the scene. Objects can be grouped and manipulated together in a style not dissimilar to *Draw*. Rotation is only available round one of the three fixed axis but this will be improved in a further update of the software.



The Material Manager makes handling textures easy.

Anything from an array of predefined objects can be swiftly added to your scene with only a couple of mouse clicks. Alternatively the editing of single polygon shapes is also possible. Several special editing tools allow mirroring, sweep object design and automatic polygon connection between two shapes. The thickening tool adds a back and sides to a flat, 2D shape; very useful indeed. This is accompanied by the multicopy tool which duplicates a single object into a circular or regular array of shapes. Spray or star shapes are very easy and quick to create with this method. Further transformations can be added by importing a simple script file to the editor, which is ideal for the budding fractal artist.

The properties of your 3D objects are controlled by the Material Manager. A wide range of pre-defined materials are included and are accompanied by attractive graphics which aid the selection process immeasurably. New materials can also be constructed with ease, and sprite textures can also be used. Each object can be shaded with several combined textures, and full control over transparency and reflectivity is available. The Material Manager keeps all aspects of object colouring wrapped up in a neat and intuitive package.

The view window can contain one of three different representations of your 3D scene. The basic view is a standard wire-frame rendering but this can be enhanced with a very useful light-sourced and back-culled mode. If you want to go the whole way, *Merlin* provides a filled objects view which uses gouraud shading to display the light-sourced shapes.

When your 3D masterpiece is complete, the second part of the *Merlin* package comes into use. The tracer program offers a wide range of settings and several definable preview and full ray-tracing levels. The lower levels produce low quality but very fast rendering for preview purposes, with the higher levels usually set to produce the final output for your picture. Several types of anti-aliasing are available, balancing speed with quality.


The impact of names in the virtual world.

Rendering speed is adequate, but unfortunately, the editor's redraw speed does not compare favourably with the lightning reactions of the other packages reviewed here. *Merlin* on anything less than a Risc PC is usable but sluggish.

Merlin does contain some major problems for the serious 3D artist, not least of which is the annoying implementation of the separate editing and camera view modes. However, *Merlin* is the only usable professional-quality ray tracer available on Acorn machines and for me that's enough to encourage my use of it.

Currently only *Draw* file and DXF format import and export facilities are provided, but the ability to communicate with the other modelling packages reviewed here, would greatly enhance *Merlin's* usefulness. Despite my criticisms of some aspects of *Merlin*, I'll still be regularly using it for my own graphics work.

Paul Wheatley AU

Product details

Product: Top Model
Supplier: Sincronia Soluzioni Multimediali
Tel/fax: +39 11 53 91 73

Product: Merlin
Supplier: The Datafile
Tel/fax: (01934) 823005
E-mail: sales@datafile.demon.co.uk
Price: £123.50 inc VAT, site licence £470 inc VAT, demo disc £1

Product: Da Vinci 90
Supplier: Aspex
Tel: (01822) 611060
Price: TBA

The Clan – Acorn's enthusiasts' scheme – has now been running in earnest for just over a year. David Matthewman finds out how it fits in with Acorn's general strategy.

To your own clan be true

At Acorn World 1994, Acorn launched its scheme for enthusiasts called the Clan. The show rapidly filled up with people wearing sweatshirts, t-shirts and lapel badges with a strange symbol on them, as they handed over £15 in exchange for a number and a bag of goodies.

It all went worryingly quiet for a few months, and Clan members started to mutter quietly about whether or not Acorn was going to actually *do* anything, having taken their money. However, all this changed when, just before BETT, Chris Cox was put in charge of the Clan.

Running the Clan

'I started work at Acorn on 2 January; the second week of January was BETT and so the place was in complete chaos,' recalls Chris. 'Added to this, I walked in and straight away had a two hour chat with Peter Bondar in which he basically told me to build a "Rocket Ship" Risc PC for the show.'

Not only had Chris just started at the company and so didn't know where anything was, he didn't even have a computer to start with – just a couple of boxes and some motherboards which might or might not have worked. Chris got it built and the Rocket Ship packed with slide scanners and SCSI cards made its appearance at BETT while Chris went round and introduced himself.

Clan Acorn, although officially part of Acorn Education, is for all practical purposes a separate part of the company. Although Chris uses the existing sales channels set up for Acorn Education, he's really selling what ART is doing; mobile phones, technical code, multi-tasking Replay. Because enthusiasts *are* enthusiasts, Chris can send out beta-test code in the knowledge that even if it crashes occasionally, Clan members will still get a lot out of running it.

The new *Timecode* module is shortly to be an example of this, and Chris hopes that this may have exciting spin-offs as Clan members think of novel and clever ways to use the module. It is this seeding of ideas and reaping the benefits that underpins the Clan's philosophy. It is indeed a marketing strategy by Acorn, but it is one that recognises the value to Acorn of it's enthusiast market, and their willingness to help Acorn succeed.

Centres of technology

When Acorn set up the Education Agency channel last year, the traditional route of buying computers from a local dealer was thrown into uncertainty. While the Education Agency scheme is starting to bear fruit for Acorn's market share in education, it is not usable by the enthusiast sector – at least, by those who are not in education.

The enthusiast market is different. It's not sensible for Acorn to sell direct to enthusiasts. A school might buy a set of machines and add a few expansion boards

Centres of Technology

This is a list of names and addresses of current Acorn Centres of Technology, where Clan members can be assured of dealing with like-minded enthusiasts on the other side of the counter:

Beebug Limited
Address: 117 Hatfield Road, St Albans, Hertfordshire AL1 4JS
Tel: (01727) 840303
Fax: (01727) 860263
E-mail: info@beebug.co.uk

C J E Micros
Address: 78 Brighton Road, Worthing, West Sussex
Tel: (01903) 213361
Fax: (01903) 523679
E-mail: cjemicro@pavilion.co.uk

Alsystems
Address: 47 Winchester Road, Four Marks, Alton GU34 5HG
Tel: (01420) 561111

Atomwide
Address: 7 The Metro Centre, Bridge Road, Orpington, Kent BR5 2BE
Tel: (01689) 814500
Fax: (01689) 814501
E-mail: info@atomwide.co.uk

Uniqueway
42 Crwys Road, Cardiff CF2 4NN
Tel: (01222) 644611
Fax: (01222) 644622
E-mail: sales@uniqway.demon.co.uk

Desktop Projects Limited
Address: Unit 2A, Heapriding Business Park, Ford Street, Stockport SK3 0BT
Tel: 0161-474 0778
Fax: 0161-474 0781
E-mail: info@desktopp.demon.co.uk

A J S Computers Limited
Address: 51 Heath Drive, Chelmsford, Essex CM2 9HE
Tel: (01245) 345263
Fax: (01245) 345233
E-mail: info@ajscomps.demon.co.uk

Davyn Computer Services
Address: The Workshop, Off Princess Street, Sandal, Wakefield WF1 5NY
Tel: (01924) 254800
Fax: (01924) 258036

Norwich Computer Services
Address: 96a Vauxhall Street, Norwich NR2 2SD
Tel: (01603) 766592
Fax: (01603) 764011



and peripherals, but enthusiasts tend to buy a single machine and expand it in all manner of non-standard ways.

'There's just no way that Acorn could support that centrally,' points out Chris. 'You have to have specific knowledge, and you have to have a personal relationship with the customer. What I wanted to do was to take those dealers who really support enthusiasts and are happy to deal with this stuff, and nurture them, encourage them and basically channel as much of the business into them as I could. In this way, they would have a good, strong business, to be able to support and fund and do the advertising for this group.'

It's important not to spread this too thinly, or no one has enough money to advertise, or train, or provide adequate support. The original list for centres of technology came from a survey that Acorn conducted a year ago to find out which dealers enthusiasts liked. Centres of Technology do have certain obligations themselves – they have to spend a certain amount on marketing in some form, which Acorn does contribute to. Mainly though, Centres of Technology must be able to answer questions of the nature of 'Why doesn't this SCSI card work with this hard drive?', which is the level of question that an enthusiast is likely to ask.

Clan Internet

More Centres of Technology will be added soon, when Chris knows the results of a second survey which has been conducted via the Clan's Web pages.

'I'm trying to get more and more people onto the Net,' Chris explains. 'There's a couple of reasons for that. First of all, the more Acorn people we get on to the Net then, collectively, the more noise we make in this new electronic medium. You get more Web home pages for Acorn people; you get more postings to newsgroups on many different subjects by people who understand Acorn.

'Secondly, it is a lot cheaper to send information to people over the Net, and feedback is a lot faster, too.'

The Clan has its own password-protected area of Acorn's Web site, on which exclusive technical briefings are posted. Clan members can keep more up to date with progress at Acorn than just about anyone else, and can find out full details on the latest news stories.

Offer for Clan members

One of the objectives of the Clan is to encourage individual people to start writing programs who would not otherwise have thought of it, or to encourage those who have dabbled but not had the technical knowledge or the tools to write a full Desktop application. UK Clan members can take advantage of this special offer of a discounted programming bundle, to get you writing applications for your Archimedes.

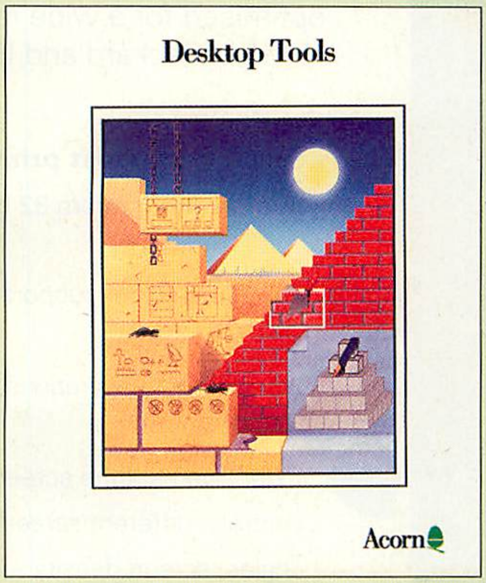
Offer one – complete programming kit. With this offer you get Acorn *Desktop C/C++*, together with a complete set of PRMs. The bundle contains:

- *Desktop C/C++*, including the *Toolbox* and resource editor (see the demo on the cover disc) and an Assembler.
- Volumes 1 – 4 and 5a of the Programmer's Reference Manuals, the complete guide to RISC OS up to and including RISC OS 3.6.
- The RISC OS *Style Guide*.

Price to Clan members: £249.95 inc VAT

Offer two – Desktop C/C++. For those that already have the PRMs, Acorn *Desktop C/C++* is available on its own, for a reduced price of £179.95 inc VAT, a saving of £70 on the normal retail price.

These prices include postage and packing in the UK. The offer is not available to overseas residents due to the high postage and shipping costs. The offer is available to Clan members only.



Joining the Clan

The Clan has well over 3000 members, and is growing daily. Clan members get a free t-shirt and lapel badge when they join, as well as a pack of technical information, some discs full of goodies and a membership card. Regular mailings from Acorn keep them up to date with all the latest stories. If you are not already a Clan member, and would like to join, you can do so by sending £15 to:

Acorn By Post, 13 Denington Road, Wellingborough, Northamptonshire, NN8 2RL

Please include your name, address, phone number and, if applicable, e-mail address with your cheque. Credit card payments are also accepted.

If you want to find out more about the Clan, you can contact Chris Cox at Acorn:
Tel: (01223) 254254
Fax: (01223) 254262
E-mail: ccox@acorn.co.uk

AU

ORDER FORM

Please send me:

...... complete programming kits at £249.95 inc VAT each

...... *Desktop C/C++* at £179.95 inc VAT each.

I enclose a total payment of:__________

I wish to pay by:

☐ Cheque ☐ Postal Order (made payable to Acorn by Post)

☐ Credit card (VISA/Access)

Expiry date: [/]

Card No: [ ][ ][ ][ ]

Name: __________

Address: __________

Postcode: __________

Daytime phone no: __________

Clan membership number: __________

Nominated Centre of Technology: __________

☐ Please tick here if you do not want to receive promotional material from other companies

Send your completed order form to: Acorn User Clan offer, Media House, Adlington Park, Macclesfield, SK10 4NP. Please allow 28 days for delivery from when we receive your order. To qualify, orders must be received by the end of March. E&OE.

The **Fastest** Printer Drivers Available

RISC OS 3

Turbo

D R I V E R S

TurboDrivers – a range of **exceptionally fast RISC OS printer drivers**, optimised for a wide range of popular mono and colour printers from Canon, Hewlett Packard and Epson.

- Simply the **fastest printer drivers available** for Acorn 32 bit computers
- Full 24 bit colour support
- 3 or 4 colour separations
- Extensive halftone screen control – different screen types, angles, screen density – features you would normally only find on expensive PostScript printers
- Print from file entirely in the background
- Support for all the most popular Canon, Hewlett Packard and Epson printers
- New diffused dither option to produce near-photo quality bitmap printing



With the availability of new low cost colour inkjet printers and the increasing use of colour in printed documents, there is now even more reason to use TurboDrivers than ever before.

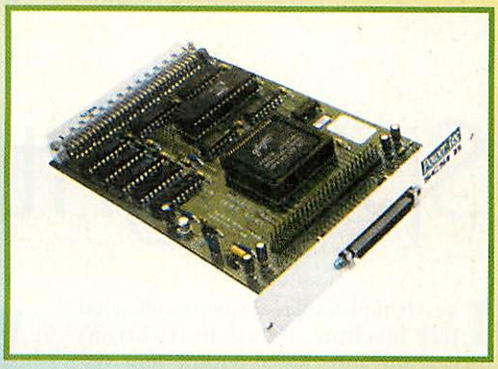
TurboDrivers RRP: £49 + VAT (£57.57 inc.)

Require RISC OS 3.1 of later and !Printers 1.22 or later, 2Mbyte RAM for mono work and 4 Mbyte for colour work. A hard disc and !Printers 1.28 recommended. Does not work with !Printers 1.52. TurboDrivers are available for Canon, HP Deskjet/LaserJet and Epson Stylus printers. Please state printer make and model when ordering. Site licences and network spoolers are available. Computer Concepts can also supply a range of Canon bubblejet printers with TurboDrivers - please ask for details.

Computer Concepts Ltd

Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX Tel: 01442 351000 Fax: 01442 351010
Email: info@cconcepts.co.uk Web: http://www.cconcepts.co.uk

You can have SCSI too



We have two SCSI 2 interfaces to be won in our easy-to-enter competition.

With the growing range of CD-ROM drives, hard discs and scanners available as SCSI devices, this is your chance to equip your Acorn computer with the latest Power-tec SCSI 2 card from Alsystems and harness the raw power of multimedia.

The Alsystems Power-tec SCSI 2 card is one of the leading cards in the Acorn market. It has the following features:

- up to eight SCSI devices connected
- up to 4Gb storage capacity for each device
- up to 5Mb/sec data transfer rate
- password protection
- can read DOS partitions

Just select the correct answers for these questions, tick the appropriate box, fill in your own details and send it to us at the address given, or e-mail the answers and details to auscsi2@idg.co.uk.

***Note:* The AlSystems SCSI 2 card is only available as a full-size podule, and so is not suitable for A30x0, A4000 or A4 systems.**

1. What does DMA stand for?

☐ Delayed Memory Access

☐ Direct Memory Access

☐ Dreaded Memory Annihilation

2. How many SCSI devices can be attached to one SCSI interface?

☐ 6

☐ 8

☐ 16

3. Which of these cannot be a SCSI device?

☐ Scanner

☐ CD-Rom drive

☐ IDE hard drive

Tie-breaker: In 15 words or less complete the following: *I need the latest technology because...*

____

____

____

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Address: ....

....

....

Postcode: ....

Country: ....

☐ Please tick here if you do not want to receive promotional material from other companies.

Spotlight on word processors and

David Matthewman compares the best DTP and word processing software around.

The Archimedes has always been a good DTP machine. Points in its favour include the anti-aliased outline font system, the *Draw* file format (almost a DTP format in its own right) and the general speed of the ARM processor. Right from the start, the trend was for truly WYSIWYG – what was on the screen was as close as possible to what would appear on the printer.

Today, the speed advantage of the ARM processor has been eroded, but the packages on the Archimedes are still highly competitive. What software you use can depend heavily on what you are going to use it for. The needs of a professional printer geared towards producing finished film will be different from those of a club secretary producing a newsletter, and a student writing a thesis will have different needs again.

The Impression family

Impression, from Computer Concepts, comes in three versions: *Style*, *Publisher* and *Publisher Plus*, aimed at progressively more demanding sections of the market. *Style* itself is a pretty powerful DTP package, easily meeting the needs of most home users.

All the *Impression* family are heavily frame-based – basically you create a frame and then drop text or graphics into it. The principle is easy, but it can get surprisingly fiddly if all you want to do is type some text onto a page. The master page system suffers a bit from this; it's powerful but awkward.

Mind you, ease of use is relative. Once you get used to the frame system in *Impression* it's very productive – the same goes for the style system for changing text attributes. The user interface is good and the program is the fastest one around – it's written in pure ARM code.

If *Style* is suitable for the home user, *Publisher* and *Publisher Plus* are aimed at the professional. In this field, they are really the only choice, as they offer colour separation, bleed and – in *Publisher Plus* – support for named colours. However, for the amateur DTP user, there are only a couple of advantages of *Publisher* over *Style*, these being irregular frames and automatic smart quotes.

All the *Impression* families come with *WordWorks*, a very good dictionary and thesaurus, and have a powerful spelling checker built in. The main problem with *Impression* is that there has been precious little development done on it in the last year, meaning that many promised features like irregular text frames and rotatable text have not been added. It would be going much too far to suggest that *Impression* looks dated, but it has been overtaken by the opposition in some areas.



Impression Publisher remains the standard package for professional users, with *Publisher Plus* offering even more features.

EasiWriter

EasiWriter from Icon Technology is an unashamed word processor. It can handle graphics, but only as inline images, rather than as separate objects in their own right. For word processing, this isn't very limiting, and there are some outstanding featured in *EasiWriter* that make it a more natural word processor than the *Impression* family.

For a start, Endnotes and Footnotes are included – these are awkward on a frame-based system like *Impression*. Creating sections and chapters is easier too, and there are some nice touches. For instance, if you double-click on a word and delete it, *EasiWriter* obligingly removes one of the spaces around the word so that you don't end up with a double space; drag and drop editing works in this way too.

The spelling checker will pick up uncapitalised proper nouns, copes correctly with words involving ligatures, and will even assign a language to a particular word. Table creation is easier than on other packages, and is automatic when importing CSV files (although the separate program *Tablemate* from Dalriada Data does create better tables, and *TechWriter* can OLE with it). There is a limited undo feature too, which is very handy if you suddenly find that you've done something you didn't want to.

The professional version of *EasiWriter* has a few enhancements over *EasiWriter* itself, chiefly in possessing a powerful indexing system, although it also has a handy option to save text files formatted to a certain line width – ideal for e-mail and *!Help* files.

TechWriter

TechWriter is *EasiWriter* with equations built in making it the only Archimedes program suitable for technical documents, unless you use the port of *TeX* which was on the *Acorn User* cover disc. The professional version of *TechWriter* can save

The programs compared

Program	Publisher	Price	Speed	Rotated text	Irregular frames	RTF import/ export	EPS import	Colour separation	Posters	Magazines	Technical writing	Letters	Mail-merge
Style	CC	£99 + VAT	Good	No	No	No	No	No	Good	Fair	Fair	Fair	Average
Publisher	CC	£169 + VAT	Good	No	Yes	Yes	No	Yes	Best	Good	Fair	Fair	Average
Publisher Plus	CC	£299 + VAT	Good	No	Yes	Yes	Yes	Yes	Best	Best	Fair	Fair	Ave
EasiWriter	Icon	£89 + VAT	Ave	No	No	No	No	No	Poor	Poor	Fair	Good	Good
EasiWriter Pro	Icon	£119 + VAT	Ave	No	No	No	No	No	Poor	Ave	Fair	Good	Good
TechWriter	Icon	£149 + VAT	Ave	No	No	No	No	No	Poor	Poor	Good	Good	Good
TechWriter Pro ·	Icon	£199 + VAT	Ave	No	No	No	No	No	Poor	Ave	Best	Good	Good
Wordz	Colton	£59 + VAT	Poor	No	No	Yes	No	No	Ave	Average	Poor	Good	Good
TextEase	Softease	£49 + VAT	Fair	Yes	No	No	No	No	Best	Average	Poor	Good	Worst
Talking Textease	Softease	£65 + VAT	Fair	Yes	No	No	No	No	Best	Average	Poor	Good	Worst

KEY: one dark acorn Average; two dark acorns Poor; three dark acorns Worst; one green acorn Fair; two green acorns Good; three green acorns Best

DTP software

TeX-format files, and as *TeX* is a cross-platform standard this makes *TechWriter Pro* a very useful program indeed. Unlike *TeX*, *TechWriter* is fully WYSIWYG, and anyone writing anything involving equations on the Archimedes should undoubtedly get this program, even if they already have some other word processing software. It is much easier to use than a combination of *Impression* and *Formulix*, which is its only real competition.

TechWriter has all the limitations of *EasiWriter* when it comes to handling graphics, which is to say that you wouldn't want to design posters or magazines on either of them, but they're perfect for leaflets, manuals, letters and so on.

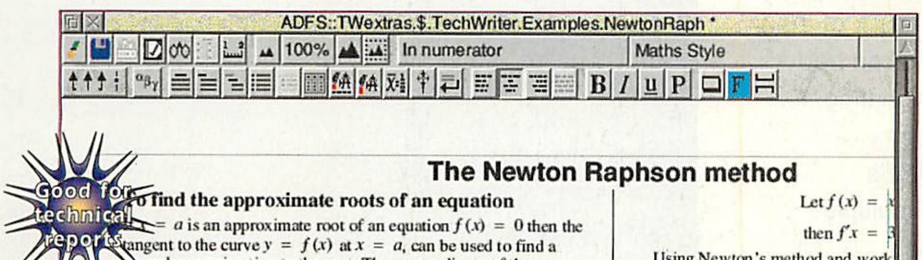
Textease

This relative newcomer to the Acorn DTP scene has rapidly established itself as the one to beat at the lower end of the market. It is a serious challenger to *Impression Style*, and scores heavily over *Style* in handling rotated text – including complete text areas – leaving you free to edit the text in situ. Currently no other Acorn DTP package lets you do this. It has a novel and welcome approach to spell checking too – words that it doesn't recognise are left highlighted so that you can go back to them later.

Textease's interface is deceptively simple. It's designed not to frighten you off, and does away with a frame-based approach; you just click anywhere and type. In case this sounds limiting, I should point out that text will flow sensibly across pages, and that headers and footers for pages are also easy to construct. In fact, *Textease* strikes a near perfect balance between being very easy to use and being powerful enough to do some quite complicated operations.

There are a number of features in *Textease* that make it perfect for creating eye-catching designs. Text can be give a shadow at the touch of a button, and colours and shapes can be graded between two end objects. In fact, one of the things that strikes you quickly about *Textease* is that the program has been designed with a fresh approach to DTP on the Arc, and incorporates a number of features that you're surprised haven't been used elsewhere.

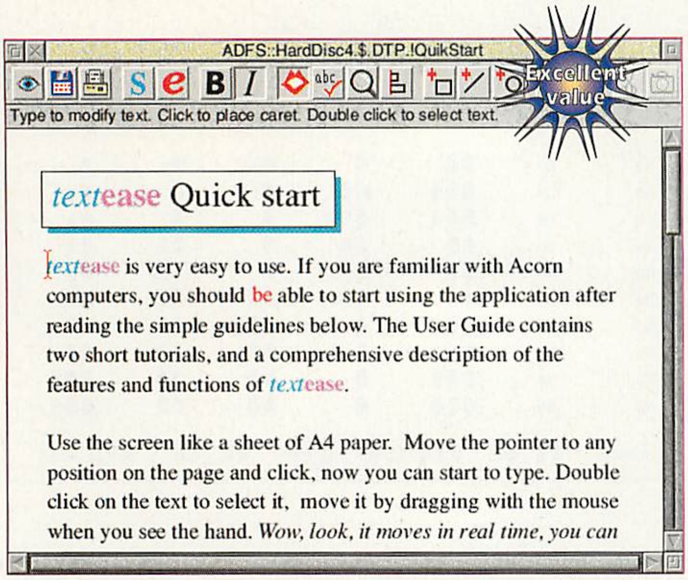
Talking Textease is, as the name suggests, *Textease* with Jonathan Duddington's *Speak* module added. However, unlike with many other packages, the module is totally integrated with *TextEase*, to the extent that *Textease* will highlight the word as it is spoken.



Textease is powerful, easy to use and – above all – cheap. It's the perfect choice for the home user and for those learning word processing, but will handle relatively complicated documents.

Wordz

The word processor section of *Fireworkz Pro* is a highly competent package which is now suffering a little from not having been updated recently. As a word proces-



***TechWriter Professional* must be the choice for anyone doing any kind of scientific report involving formulae.**

sor it is inferior both to *EasiWriter* and *Textease*, but if you are looking for an integrated package with a good word-processing section then *FireWorkz Pro* is worth a look. Particularly when it is combined with the database or spreadsheet elements of *FireWorkz*, *Wordz* is a good package for doing mail-shots.

Ovation

This DTP package – once a serious contender and still perfectly usable – is shortly to be replaced by *Ovation Pro*. Current indications are that *Ovation Pro* will occupy a niche at the high end of the market, having a number of features over *Publisher*, but lacking *Publisher's* colour separation facilities. *Ovation Pro* will be covered in a separate review when it is released. AU

Product details

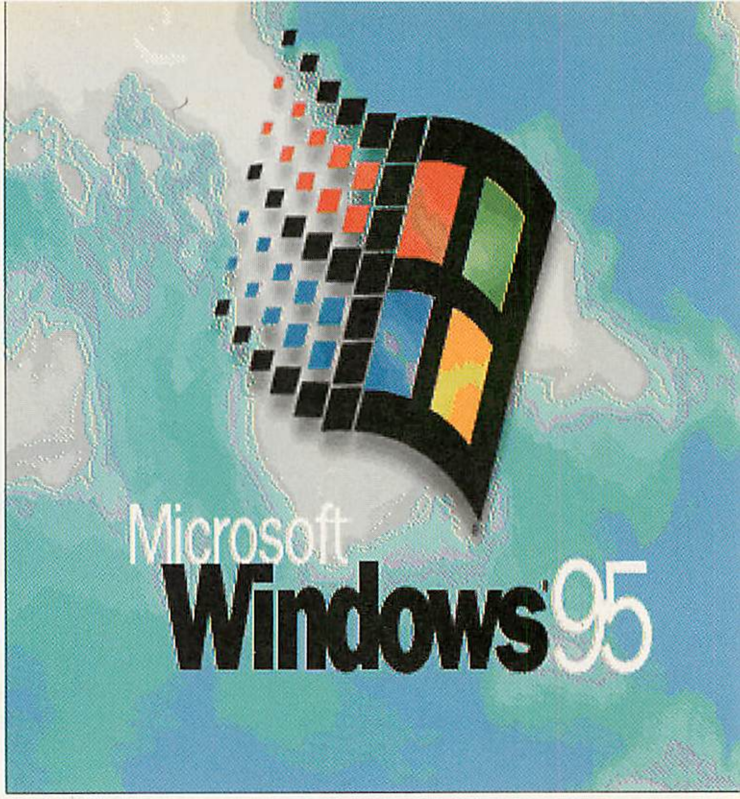
Computer Concepts
Tel: (01442) 351000
Fax: (01442) 351010
E-mail: sales@cconcepts.co.uk

Icon Technology
Tel: 0116-254 6225
Fax: 0116-247 0706
e-mail: mike@lccgroup.co.uk

Colton Software
Tel: (01223) 311881
Fax: (01223) 312010
E-mail: sales@colton.co.uk

Softease
Tel: (01332) 204911
Fax: (01684) 772922
E-mail: sales@softease.demon.co.uk

Getting started with your PC card



Mike Buckingham explains how he installed a PC card in his machine and eventually persuaded it to work.

Squaring the circle

I have to admit I felt like a real heel, a traitor to the cause of Acorns which I have espoused since the heady days of the BBC Micro. There I was with a 486 card in my hand and I was about to plug it in next to my ARM chip – sacrilege. My 486 co-processor had finally arrived, but not being a PC clone myself, I wasn't looking forward to the installation.

Physically fitting the PC card into the Risc PC is so easy I thought I might have done it wrong: simply lift the lid, slot it in and put the top back. Next is the software; I have to admit that I don't like DOS. It has always struck me as crude and difficult. I use it at work, but I'm not impressed. My one hope was that since the card is an Acorn product with Aleph One's know-how behind it, software installation wouldn't be too hard.

In the event installation was a tale of mixed fortunes. My card came with two set-up discs and two manuals with little to tell them apart – except one was labelled 486, the other x86. My card was a 486 so I used that. Wrong move. In fact you can save yourself a lot of potential grief using the *PCx86* software – a later improved version which completely supersedes *PC486*. *PCx86* is fine for Windows 3.1, but if you want to run Windows 95, you ought to get a still later version, of which more later.

First run the *PCconfig* program to set up your machine – most critically to set up a drive for DOS. Then install and run *PCx86*, the program that interfaces the PC card to the Acorn. Follow the instructions carefully and it's a breeze.

Double your memory?

Thus far it's a familiar Acorn world, but then you have to load DOS. MS-DOS comes on a set of discs, the first of which contains an installation program. To my surprise and relief this ran perfectly – with one exception. DOS includes a data compression program which aims to (roughly) double the space available on your drive. In the Acorn world one wouldn't generally bother with such things. Code is usually very concise. However, things are very different in the world of DOS.

I reckon that PC should stand for Profligate Code. Everything on the PC eats RAM and disc bytes as though IBM and Microsoft were plotting to force you to buy more. A friend with a new PC was bragging about his 1Gb drive a few weeks ago. His teenage son has filled it up already with Shareware, free demos, games and so on. Perhaps it's because Americans are used to big living spaces, but there is so much stuff out there, and it's so memory hungry that 1Gb just doesn't seem big these days. Even CD-ROM programs like *Encarta* grab a chunk of hard drive when you install them.

Added to this, when you realise that DOS and Windows occupy the best part of 100Mb when fully installed, you'll begin to see why a large hard drive is a necessity, not a luxury.

So: think big. Or think big-ish and double it with a compression system. The trouble is, I couldn't persuade the DOS-based system to work. Never mind, I thought, there's one in Windows I can use later.

On with the installation

The next stage was to load Windows. As I had a copy of Windows 3.1 I set about loading that. Like MS-DOS it has a loading program and installs relatively easily, although installation isn't quick.

Making it run automatically from start up is a fiddle. The manual tells you to add the instruction **WIN** to the *AUTOEXEC.BAT* file. That's quite easy – working from the DOS SHELL screen you use the editor to effect the change, then you save it and reboot. Hey presto, nothing has changed. You must *also* delete the line that starts up DOS SHELL, or pre-

Handy tip for upgrading to Windows 95

When the Windows 95 installation software asks you which directory you want to use to install the program to, specify a different directory from the default *WINDOWS* one given. I used a directory called *WINDOWS* for 3.1 and *WIN95* for the upgrade. If you install in the same directory, the software is reputed to be less reliable. From my own experience, I can confirm that my second attempt at installation using two directories has proved much more satisfactory.

cede the command with **REM**, then it works.

So, is that it then? Not in my book. I feel that Windows 3.1 is an insult to RISC OS. Sure it will run, but it's far from satisfying. The only option is to upgrade to the slightly unstable but much easier to use Windows 95.

Making Windows 95 run

Windows 95 is available as an upgrade from 3.0 or 3.1 (on floppies or CD-ROM) for about half the full price, but *PCx86* does not support it – or does it? The answer is: yes and no.

Acorn told me that it can't support Windows 95 because the software is so unstable. Acorn's contracted-out support service said 'no way'. And that's a bit worrying, given that it's highly unlikely that Microsoft will support the program on an Acorn PC card – Microsoft won't even offer support if its programs are run on a network. However, the x86 manual says that it's possible.

So, if you must, follow the instructions in the *ReadMe* file and it will work – after a fashion. The procedure involves editing the Acorn screen mode file – to be found in *!Boot.Resources.Configure.Monitors* – and using the 'custom installation' option offered by the Windows 95 installation 'wizard'. Then you must stop the program hunting for hardware that isn't there and which instead is emulated by *PCx86*.

Otherwise it's easy enough; you just have to get used to the fact that the drive will whirr dementedly – a feature familiar to MS-DOS users and quite normal.

You must also be prepared to wait – the process takes almost an hour. Once installed, things run well with a few exceptions. For example, on start up the PC screen goes through a sort of '60s acid trip that is quite normal; it's caused when Windows tries to use a screen mode the Acorn doesn't use. But – more seriously – other bits of Windows 95 such as the compaction program simply hang.

A call to Aleph One – who designed the Acorn card as well as its own – uncovered a solution. Aleph One's latest version of *PCx86* (version 1.92) is the first to be intended to support Windows 95. It's harder work but, now that I've installed it, it does seem worth the effort. There are some big differences in installation. To begin with, there is a new improved set of drivers – sound, screen, CD-ROM and so on. According to the *ReadMe* files (you really must read *all* of these, not just the main one) these should be copied to your *drive_c* from whence they should install. I found that once I'd installed Windows 95, they hadn't done so. Instead I had to go back to DOS SHELL and do it by hand, then tell Windows 95 that the new files were there using the Desktop hardware installation utility. Be careful and it's not too difficult.

Success

And it works: *Encarta*, *The Louvre* and other Windows 95 programs run fine. The problems then arose trying to run things from MS-DOS, but more of that later... AU

• Mike Buckingham joins Acorn User *next issue as a regular writer, editing the bi-monthly PC card column.*

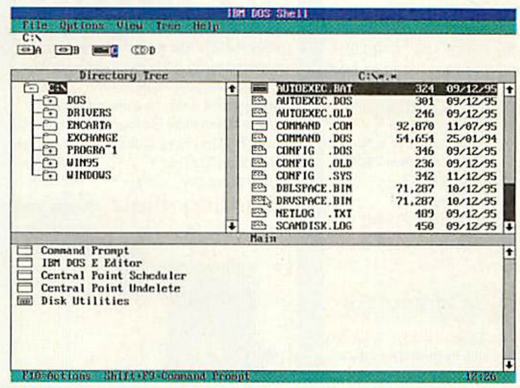
Editing your DOS files

To get at DOS files you start with the DOS SHELL screen, which is accessed from DOS. If you haven't loaded Windows you will be here already, but if you have then the following is the simplest course of action once you've got the Windows 95 screen in front of you:

- Click on START
- Click on Shut Down: this will give an option screen.
- Click on 'Restart the computer in MS-DOS mode'. That will give you some text and a command line, probably C:\WIN95> or something similar.

You will now be in DOS. Type DOSSHELL at the > prompt (and press Return).

DOSSHELL is pretty obvious in use really. The top left area shows your directories, the top right shows the files in the selected directory – on the screenshot above the root directory C:\ is highlighted and its contents are listed on the right. You can see the *AUTOEXEC.BAT* file at the top, with *CONFIG.SYS* (which is also important) about two thirds of the way down.



You can then use the IBM DOS *E* Editor – double click on it to bring up a green dialogue box, into which you type the name of the file which you want to load.

Why not just load the file into *Edit* by accessing the PC partition from RISC OS? You can certainly do this, but you must remember to terminate each line with an &0d &0a character sequence, rather than the RISC OS standard &0a character alone. Editing the file in *StrongEd* is easier because it automatically senses what character combination is being used as an end-of-line marker.



Don't worry if your computer freaks out whilst loading Win95 – this is normal and it goes away. Version 1.92 of *PCx86* nearly cures this.

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Internet innocents

Mark Smith presents the first part of a survival guide for newcomers to the Internet.

The Internet is the media buzz-word of the moment and anyone visiting Acorn World '95 can hardly have missed the Cyber Café, Argo selling its new Internet service, ANT selling its new software and Doggysoft selling *Termite Internet*. The Internet has really started to take off in a big way in the past year and this is just as true for the Acorn scene as it is for any other computer platform.

To keep the costs to a minimum there is also excellent Freeware software available which can be used to access Internet services. Packages worth particular mention include Tom Hughes's *Freenet*, an Internet 'stack' (compatible with Acorn's own equivalent which is also now freely available and is an integral part of RISC OS 3.6). Client software for *Freenet* can be written for any Internet service which exists now or may be added in the future – and example is the freeware Web browser, *ArcWeb*.

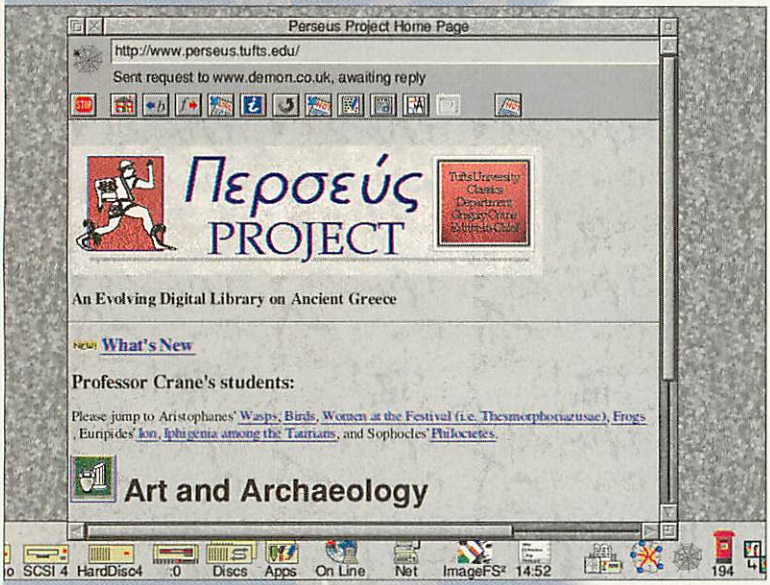
What is the Internet?

The Internet is simply a communications medium, only it is rather more flexible than more traditional communications methods such as the telephone. Available services include:

- Electronic mail: one-to-one communication.
- Usenet news: send messages on almost any subject to anyone else who is interested. This will be covered in part 2.
- The World Wide Web: publish pages of text and graphics so that anyone who is interested can read them. Pages may be linked to any other, allowing you to move easily to other related pages, even if they are stored elsewhere on the Internet. As well as text and graphics, links may be followed to other resources such as software.
- Ftp (file transfer): download (fetch) software or other resources such as text and pictures from a site on the Internet. You can also upload (send) files to most sites so that other people can access them.
- Telnet: use computers anywhere on the Internet. Examples include computers running bulletin boards or a multi-user OS such as Unix.
- IRC (Internet Relay Chat): talk with other Internet users in real time – you type and it immediately appears on their screen).

And many more...

The Internet consists of a series of linked computers (or nodes) across the world, all identified by 4-byte IP (Internet Protocol) addresses; for instance 158.152.186.172 – my Risc PC when I'm connected to Demon Internet. IP addresses are not very easy to remember, so every machine is also identified by one or more unique hostnames, for instance www.idg.co.uk which serves IDG Media's Web documents to interested parties.



Web-browsing is the activity most commonly associated with the Internet, but there's much more to it than that.

Electronic mail

Anyone who has ever used the Internet has probably used e-mail. It is the most basic service going, but is still extremely useful. To send someone some e-mail, they don't have to be sitting in front of their computer – if they are not it will be held for them until they are.

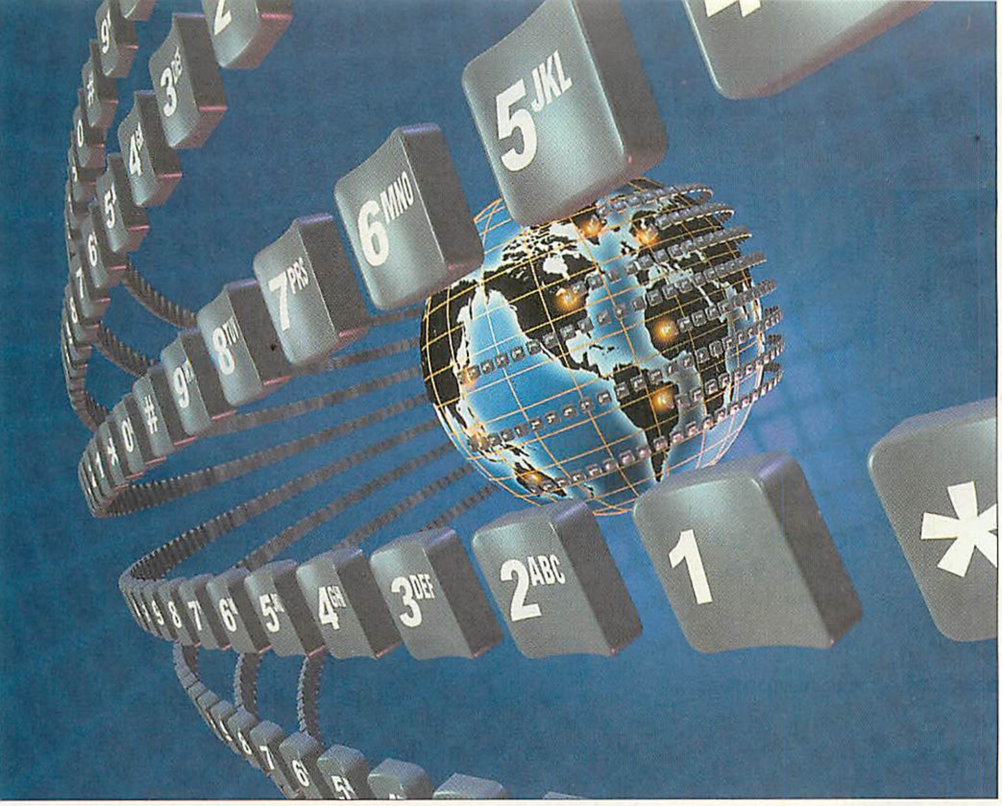
E-mail addresses are of the form user@domain, where the domain is simply an indicator of where the mail should be sent to. For example, my main personal e-mail addresses are:

marks@argonet.co.uk – this is sent to Argonet to be held until I'm ready to read it, and: **mark@findon.demon.co.uk** – this is held by Demon Internet until I'm ready to read it.

In this case, any e-mail sent to <anything>@findon.demon.co.uk will be sent to me, so I can set up as many users as I like on my computer.

As well as sending plain text messages, it is possible to send 'binaries' (non-text files such as pictures, archives and so on). Because the e-mail system is only designed to handle text, binaries must be first encoded into a manageable form. The most common means of sending binaries are UUencoding using MIME attachments.

MIME attachments are often the easiest way of handling binaries, but you should be aware that the most popular Acorn mail reader – the Freeware *TTFN* – does not support these so if you send one to a TTFN user, they may be unable to decode it. The *Voyager* mail reader and Acorn's *InterTalk*



do support them and this is becoming increasingly common.

One word of warning – large binaries can take a long time to transmit, especially if you are using a modem and a telephone link to your service provider. Likewise, if the person you are sending it to has a dial-up connection, you should first make sure that they really want what you are about to send and that it is in a form they can decode. They are unlikely to thank you if you send something that takes ages to fetch which they either don't want or can't do anything with.

Signatures

A signature is a *short* text message that is appended to the bottom of every mail or news message that you send. It should usually be kept fairly short – the recommended maximum is four lines. This is particularly important for news postings which will be sent around the world. As an example, here is mine:

```
Mark Smith - Surrey, UK
This message was posted via my private Internet account.
It doesn't represent the position of any individuals or organisations with whom I may be linked.
```

This is an example of the sort of things that you might put in a signature: your name, location and a disclaimer. Alternatively, you might want to put in your postal address or any other information you think necessary. It is up to you what to put in there, but large graphic images made up of characters tend to be frowned upon as they make the signature too long for no good reason. Signatures are not compulsory, so you do not have to have one at all if you don't wish to.

You should try to make sure that your signature is preceded by a line consisting only of two dashes followed by a space:

```
-- 
```

This is called a sig separator and will ensure that anyone replying to and quoting the text of your message (with a reader that understands them) will not quote your signature. Many mail and news posting applications will give you the option of adding a sig separator, but if you use one that doesn't you can simply add one manually to the top of your signature.

The World Wide Web and file transfer

The World Wide Web is a vast array of resources including hypertext pages, downloadable files and information databases scattered at different sites across the world with links connecting related sources of information.

These resources are viewed or fetched using a Web browser such as is provided by *Voyager*, ANT *Fresco*, *Webite* or Stewart Brodie's freeware *ArcWeb*. Each one is identified by a Universal Resource Locator, or URL. The first part of the URL indicates what type of resource it is:

http: HyperText Transfer Protocol, used for accessing those pretty pages of text, graphics and links to other URLs. For example, http://www.idg.co.uk/acornuser/ will get you the Acorn User home page.

ftp: File Transfer Protocol, used for accessing files which might be anything from pictures to software archives. For example, ftp://ftp.acorn.co.uk/ will display the root directory of Acorn's ftp server.

Other, less commonly used, URLs include gopher: (searchable repositories, often linked to an ftp server) and wais: (wide area information search)

Although ftp servers can be accessed in this way using a Web browser such as *ArcWeb* or *Fresco*, it is also possible to use dedicated ftp software instead. *Voyager* and the *Ant Internet Suite* have ftp 'clients' which appear similar to the RISC OS Filer and so are very easy to use.

When using ftp sites in this way, you will be required to supply a login ID and password. For public access, you may usually use 'anonymous' as the login ID and your e-mail address as the password. This is known as anonymous FTP and will give you access to the same files as you have using a web browser, usually only those inside the pub directory. Some sites will have private directories which are only accessible to people who have a specific login ID and password. Ftp follows the UNIX convention of using / rather than . as a directory separator.

Ftp sites are often a useful source of PD, Freeware and Shareware software, as well as support material provided by companies including Acorn itself. The Higher Education National Software Archive (or HENSA) provides a fairly large repository of software, including Acorn software, at: ftp://micros.hensa.ac.uk/micros/arch/riscos or:
ftp to micros.hensa.ac.uk in directory */micros/arch/riscos*. Priority is given for UK Higher Education sites for access to this service.

Demon Internet has a selection of items in:
ftp://ftp.demon.co.uk/pub/archimedes including a mirror (copy) of the HENSA site, and there are many more sites available. A fortnightly posting of Acorn-related ftp sites can be found in the newsgroup comp.sys.acorn.announce.

As well as downloading (getting) files from ftp sites, it is also possible to upload (put) files on some sites so that others can download them.

Often you can only place files in a specified *incoming* directory (usually */pub/incoming*) so that the system administrator can then ensure that they are suitable to be made available for download and that they go in the right place. You should e-mail the administrator of the server to tell them what you've uploaded and the pathname where they can find it.

Telnet

Telnet is used to connect to remote computers across the Internet. This includes logging in to a UNIX workstation or connecting to a BBS which is accessible via the Internet.

To specify the computer to which you wish to connect, you simply need to supply a hostname or IP address. For example, library.brunel.ac.uk will connect you to Brunel University's library catalogue.

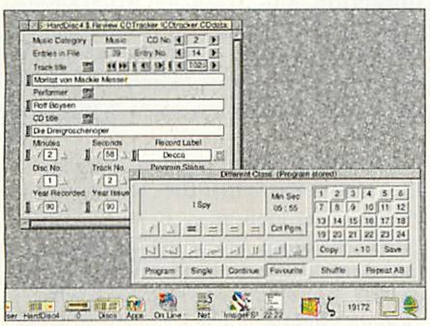
Hopefully, you now have a taste for the wide range of available services on the Internet. Next month, I'll be talking about Usenet news and explaining some of the abbreviations, 'smilies' and technical terms that you are likely to encounter. Until then, happy surfing! AU

Audio CD player software

Now that CD-ROM drives are becoming commonplace additions to Acorn computers, it is inevitable that people will be using them to double up as Audio CD players. Many CD-ROM drives these days come with CD player-style buttons on the front and can be used as Audio CD players without even being connected to a computer.

With most, it is a relatively easy affair to connect the CD-ROM drive to the hi-fi – or to mix the drive's audio output with that of the computer and use external speakers. Hi-fi purists – even those who have been tempted away from the smooth analogue sound of vinyl – may scoff at such a system, but it will be more than enough for most.

If you have a SCSI drive, it will have come with a useful program called *CDPlayer* which allows you to cue tracks from an Audio CD from the Desktop. Simply put the CD in the drive, fire up *CDPlayer*, and off you go. Most of the controls found on a standard hi-fi are duplicated, including a limited amount of programmability – for instance you can play selected tracks in a given order or all tracks in a random order (shuffle play).



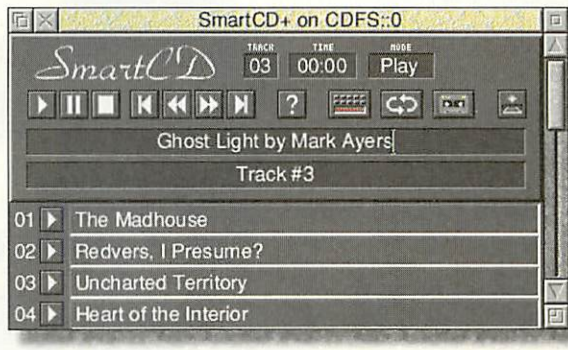
CDTracker allows you to edit the CD database while playing a completely different CD.

If that's all you need, *CDPlayer* will satisfy and you need look no further. However, if you have the makings of a CD collection, you may want to store a catalogue of CDs on the computer. It may then become useful if there were some direct interface between the CD-ROM drive and the database, so that with CD in the drive, the database could play it. Thankfully, there are programs that will do just that.

SmartCD

This program is available in two forms, *SmartCD* and *SmartCD+*. *SmartCD* is Freeware and can be found on the hensa ftp site among other places. Since it was released, it has been developed into an enhanced version *Smart CD+* – a commercial program available from the ARM Club.

SmartCD does everything that *CDPlayer* does (though the memory and shuffle play features are not in the Freeware version), but also allows you to build up a catalogue of CDs, storing the title and the track names for each disc – the program will automatically add the track lengths if you tell it to. It can recognise a disc by the pattern of track lengths. This is fairly safe, although different drives may report slightly different numbers – the commercial version includes a slight margin for error. In practice I didn't find any problems with this.



SmartCD+'s simple user interface is to be applauded.

The Freeware version is limited to 77 disc entries (no prizes for guessing where *that* limit came from) but *SmartCD+* has an effectively unlimited number. Other enhancements in the commercial version include the aforementioned memory function (which will allow you to save preferred lists of tracks with particular discs), an auto-play option if the software recognises a disc and various database functions to allow you to search for keywords.

CDTracker

SmartCD may be an improvement on the *CDPlayer* software, but *CDTracker* from Werewolf Software is in a totally different league. About the only criticism of this program is that it has so many features that it's a little bit daunting at first – some attempt to break the user in gently would be friendly. Having said that, interactive help is fully supported (if you haven't got Miles Sabin's *BubbleHelp* from David Pilling get it *now*), and the program is a lot easier to use than it looks. Read the manual and release notes even so, or you'll miss some important features and some buttons won't do quite what you expect.

CDTracker looks impressively like a CD database that just happens to be able to play the CDs for you. In fact, you can use it as just a database if you don't have a CD-ROM drive attached which is not possible with *SmartCD*. You can sort CDs into order, maintain separate files with different categories of CD and perform a basic search throughout one or more files. Each track is stored as a separate entry, so the program copes well with compilations involving many artists, and it will also handle multi-disc albums neatly.

The playback options are extensive. Not only can you shuffle all the tracks on a disc, you can also shuffle a selection of favourite tracks, all of which can be saved in 'jukebox' files. Although the program will not sort a selection of tracks on a disc to best fit them on to a tape (as *SmartCD+* will to a degree) it will print out cassette inlays for any given track selection by using the supplied *Cassette* program.

At just under £15, *CDTracker* is an absolute must for anyone with a reasonable-sized CD collection, whether or not they use their computer's CD-ROM drive to play it – it even comes with a key strip in *Draw* file format.

David Matthewman

Product details

Product: Smart CD+
Supplier: The ARM Club
Address: Freepost ND6573, London NI2 0BR
Price: £10

Pros: Inexpensive • Simple user interface • Allows basic database of CDs to be kept

Cons: Database does not have many features • No interactive help • Player controls fairly basic

Product: CDTracker
Supplier: Werewolf Software
Tel: 0181-289 6003
E-mail: info@werewolf.fido.zetnet.co.uk
Price: £14.95 + £1 P&P

Pros: Database can be sorted • Greater flexibility of entry • 'All-singing' audio player controls • Good value • Database can be used even if no CD-ROM fitted

Cons: Complicated user interface • Won't sort tracks automatically to find a 'best fit' on a tape

EDUCATION

Active IT

Geoff Preston took his family to an IT camp on the Isle of Wight to see what's on offer.

There are many holiday camps which claim to provide meaningful Information Technology for their guests. Having worked at a summer camp, albeit several years ago, I had serious reservations. All too often they are merely child minding services who have a few computers around to keep the kids quiet. Superchoice claims to offer serious Information Technology coupled with exciting activities in a package they call Active IT.



Safety equipment is provided and activities are supervised.

Superchoice is part of the Pontins Group which is owned by Scottish and Newcastle Brewers. It has two sites; Osmington Bay in Dorset and Little Canada on the Isle of Wight. They both offer a diet of sporting or fresh air activities linked with Information Technology and are frequently the sites used by some of Acorn's third-party software developers. They aim to provide a learning experience where children's education is driven by enjoyment.

The activities available at Superchoice are both numerous and varied. Apart from almost every type of boat you can imagine which is sailed or paddled in the safety of a creek rather than the open sea, there is archery, trampolining, shooting, mountain biking, swimming, hiking, tennis, quad biking and karting. The list goes on.

Information Technology

The part that really interests me is the Information Technology provision. There are four computer rooms with about 12 networked Acorn Risc PC 600s in each room together with a substantial number of peripherals including Ion cameras, Pocket Books, laser printers and control hardware. The software library includes most of the top Acorn programs.

Where possible, outdoor activities are linked with Information Technology. For example, when abseiling or indoor climbing, you are fitted with a pulse meter which takes regular timed readings. The data from this can be taken back into the Information Technology room, ported into the computer and used to generate graphs and so on. The Pocket Books are taken out so that data can be gathered and processed in the field. Further Active IT activities are also planned.

Pupils can use the rooms either for discrete IT or IT which is related to outdoor activities. Of the two, the latter is undoubtedly the best option as it will put the IT in context – something which is not always easy to achieve in the classroom.

One of the discrete IT lessons I saw was a class of 13-year-olds using Iota's *Animator* and producing some very respectable animations.

The camp

On arrival, I checked in and got the keys to the chalet. Guests stay in wooden chalets which can accommodate six: one room with a double bed, one room with two single beds and the sofa-bed in the lounge will sleep another two if required. There is a bathroom with shower and/or bath and a separate WC. The chalets are fully heated and so are suitable all year round.

After settling in, we were taken on a tour of the site which includes several conservation areas, a summer meadow and a butterfly garden. There are three problem-solving courses designed to encourage team-building. One, Jacob's Ladder, requires the team to carry a ladder from A to B without touching the ground. This part of the visit only served to show my six-year-old twins all the things they couldn't do – you have to be over seven to use most of the activities. There are activities for the under sevens, but these seem very tame compared to what else is on offer.

Safety first

Adventure camps have often been heavily criticised for poor safety or poor organisation, or both. I am pleased to report that Superchoice could not be criticised on either count. Safety is absolutely paramount and all the instructors are very highly trained, in most cases having nationally recognised qualifications.

Anybody fancying their chances of becoming a Superchoice instructor will need to prepare themselves for a vigorous induction and training programme, assuming they get past the first hurdle, the selection process. Equipment such as abseiling ropes are replaced regularly, as are any of the boats approaching their sell-by date.

Organising several hundred guests to do the choice of activities they require and in groups of no more than 10 or 12 requires careful planning. Collecting children from mainland UK from as far away as Manchester and ensuring all under 12s have 24-hour supervision is a logistical nightmare. On the day I left, coaches were arriving to take children to the port for



Inputting data from outdoor activities.

for all the family

ferrying to the mainland. There were children everywhere yet all the staff knew their job, and children were dispatched very smoothly.

Feeding the masses

The cost includes three meals. For breakfast there is a choice of cereal or fried breakfast with almost unlimited quantities of tea, coffee, orange juice and toast. For lunch there is always two choices plus vegetarian dishes; this usually takes the form of a fresh salad bar which would put to shame the salad bars in some hotels I've stayed in.

For dinner, another two choices plus a vegetarian option with soup and desert. It can't be easy cooking for large numbers of hungry kids (and adults) who can arrive at any time during a 90-minute period, but there really wasn't anything to complain about with the quality of the food.

Evenings can be spend in the Mounties Bar where quizzes, scavenger hunts and dances are provided. If you've got the energy left, there's table tennis, pool and air puck available to ensure you really do sleep well.

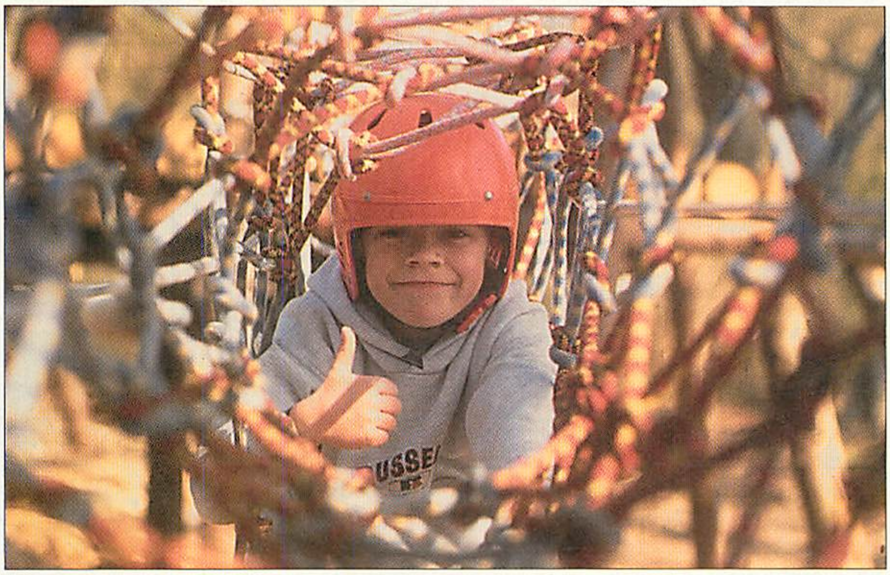
Who can go?

School parties during term time are the camp's mainstay. Anything from a single class to a whole year group can be catered for, but for very large parties you'll need to book early. School parties are also welcome during holiday periods, although there will be slightly less IT linked with activities because the staff, not unreasonably, also need to take breaks.

Families can also take advantage of these facilities for a weekend, midweek break or a full week, although Superchoice do not organise a programme of activities for under sevens as the co-ordination skills for much of what they do is not fully developed.

Parents may be either active or inactive guests (inactive prices are only slightly less). Those looking for a break could send their children alone, in which case they will be cared for *in loco parentis* – an even better arrangement might be to leave the kids at home and take yourself!

The Activities Coordinator will contact schools to discuss their exact requirements and produce a full timetable for each child. In fact, school parties can arrange what Information Technology they require to be covered at the camp and this is an ideal way of covering some of the National Curriculum which is difficult to cover at school because of lack of equipment – control for example.



Who says learning isn't fun?

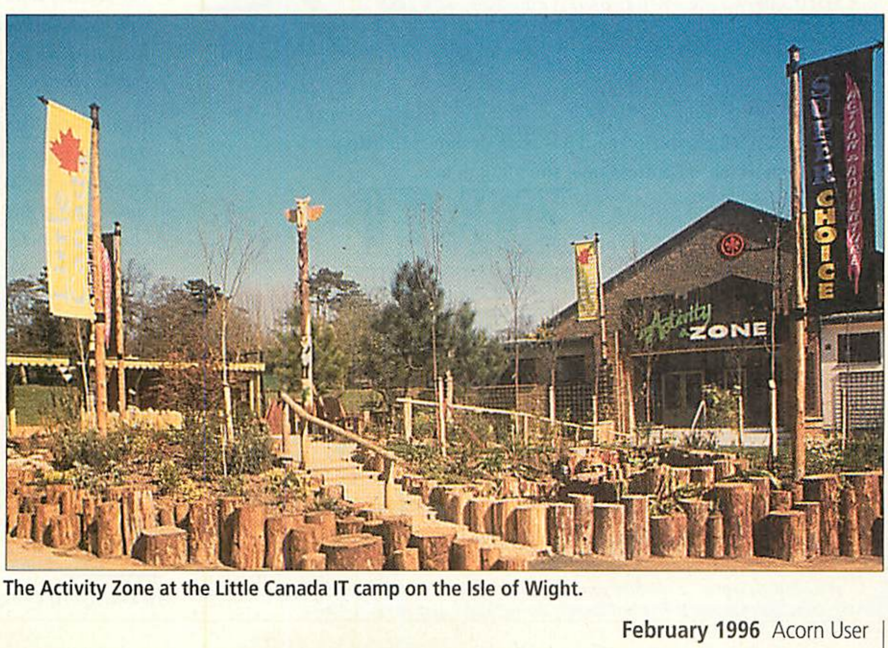
Schools might consider an inter-departmental visit. The obvious candidates are PE and IT, although the problem-solving activities seem to offer some scope for the Technology department.

How much does it cost?

This is like asking, 'How long is a piece of string?'. The cost will depend on the time of year, the amount of IT required, length of stay and the number in the party. As a *very* rough guide, a four-night stay in March/April for about 100 students with about 50 per cent IT, will be less than £140 including ferry crossing and transport from Fishbourne to Little Canada arranged by Superchoice. All that needs adding to that is the travel from your school to Portsmouth and a small amount of spending money for drinks.

A holiday with Superchoice will enable youngsters to do some serious learning outside the classroom, but above all, it's great fun!

Superchoice
Tel: (01273) 676467



The Activity Zone at the Little Canada IT camp on the Isle of Wight.

GAME SHOW

Welcome to another edition of the Game Show – I hope you've been enjoying the games included on the recent cover discs. Judging from the number of you who have contacted me asking to see more games demonstrations, it would seem to be a popular choice of subject material.

You might remember that a few months ago I mentioned that a forthcoming pinball game was being written by Mattijs van Delden. I thought I'd get in touch to see how things were progressing, as well as asking him a few more general questions. Here are his replies:

How did you start programming?

Ah, the big question! It must have been about eight or ten years ago. I had a Spectrum in those days, because we couldn't afford the expensive home 'supercomputer' around at the time – the Commodore 64 (go on, laugh). I became interested in programming games and started writing a *Frogger* clone in Spectrum BASIC. Unfortunately, I saved every new version over the top of the older one on the cassette, so when the latest copy developed a loading error, I lost everything. Well, it wouldn't have worked anyway – I didn't know anything about programming.

After that, I found myself a book on Z80 assembly language. My idea was that once I'd read the book, I'd be able to write all those wonderful games myself – well, hopefully. Anyway, I have been working on games since then, and I've never even come close to finishing one before starting on the next.

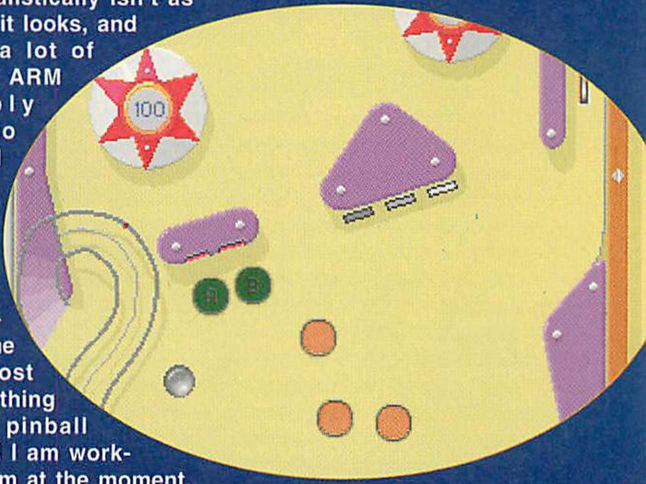
Why did you decide to write a pinball game?

About one and a half years ago, pinball was popular on the PC. At that time, the latest and greatest title available was *Pinball Fantasies*. I enjoyed playing this sort of computerised pinball, so the idea became my latest games project and my previous one was ditched once again. I've become a real pinball fan since I bought an old table – I played it to bits for a few months.

How long has the game taken you so far? How much more do you have to do?

I started this project during the summer vacation of 1994. At that stage, I had time to do something else besides studying and I made quite a bit of progress in the first six months. Since then, my spare time has been about as frequent as having a positive amount of money in the bank, so there's still a fair amount of work to do.

I've got a ball moving about reliably on a table, with various features implemented such as jet bumpers, targets, bullseyes and rails. Having a ball that bounces around realistically isn't as simple as it looks, and I've had a lot of help from ARM assembly guru Wilco Dijkstra – I think the movement of the ball is okay now.



The flippers are the second most important thing in any pinball game, and I am working on them at the moment. I'm also considering including a multiball feature, and it should be no problem even on an ARM2 machine.

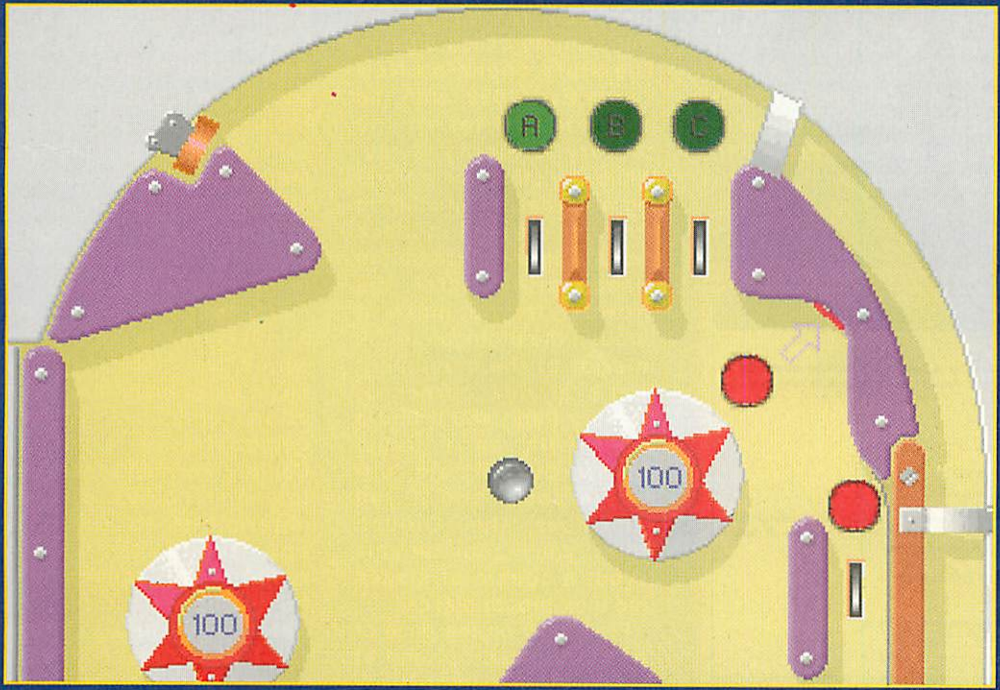
Finally, there are various other things that take up a considerable amount of time, including intro screens, music, graphics and sound – not forgetting table design. These aren't particularly difficult but they're especially important to the quality of the game. Good presentation is something that still isn't common in the Acorn games market.

If you've got access to the Web, you'll find more details from Mattijs on Gareth Moore's Acorn Gaming page at http://www.csv.warwick.ac.uk/~csuod/. As well as the background to the game, there's some technical information buried there for those who are interested.

Well, that's all I've got space for – I hope to see you next month, when I'll have more news about the latest games on the market . If you can't wait, check out our interview with the coders of *Stryker's Run III* and see what they have to say about the conversion of the latest fast-action gameplay outing for Stryker.

If you've got any information, suggestions or questions, please drop me a line at Game Show, Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP or e-mail me at my e-mail address: azimuth @argonet.co.uk. See you next time.

Steve Mumford



An early screenshot of Mattijs van Delden's Pinball game.

Adventureland

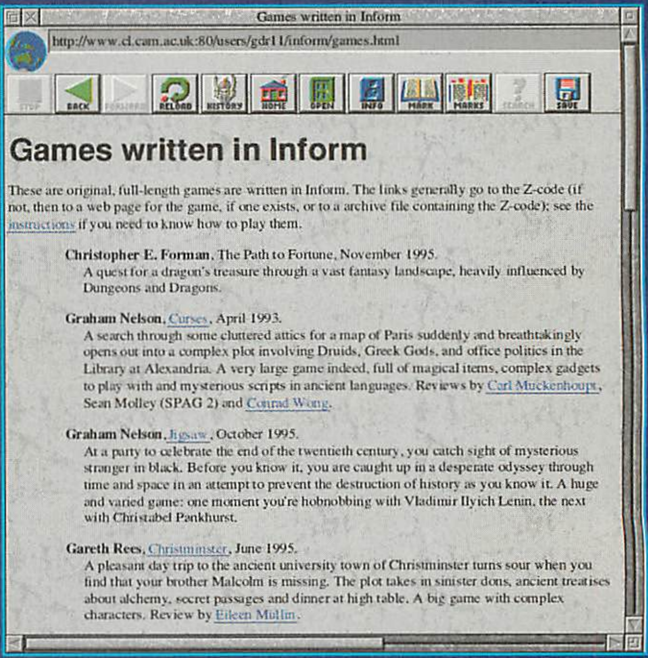
Grab your rucksack and prepare to explore the latest interactive releases.

The first adventure games I remember playing were back in the days of the BBC – I never found myself becoming particularly involved, mostly because I didn't own a disc drive in those days and loading the things was a good test of anybody's patience.

After that, I forgot about them until I bumped into the *Magnetic Scrolls* titles *Jinxter* and *Wonderland* for the Archimedes – the inclusion of graphics was a nice touch, and the parsers had developed a fair way in terms of their complexity. Because of their greater 'intelligence' and the huge increase in storage space available, adventure games were able to provide a wider range of responses and so enhance the freedom of the player, leading to the creation of the rather grandiose term 'interactive fiction' to describe these new-generation games.

The next time I dabbled in these waters was when I discovered Graham Nelson's *Curses* on the first Acorn User CD-ROM – written in Infocom's *Z-Machine* format using his own compiler, the game follows your exploits as you prepare for a family holiday in France. All you need to do is find the map of Paris that you were certain was drifting around the attic; however, it's just possible that you might get sidetracked.

I wandered around for a while, found the radio, popped down to Hell for a chat and even managed to converse with the robot mouse before I found myself irrevocably stuck. I was just about to give up and return to *Spheres of Chaos* for a bit of consolation when I suddenly realised, to my great chagrin, I'd completely failed to notice a horribly obvious exit leading to the rest of the attic. After that embarrassment, I was determined to carry on with the game, following my newly-formulated Golden Rules – read all the descriptions carefully, and if there's a piece of furniture in the room, look under it.



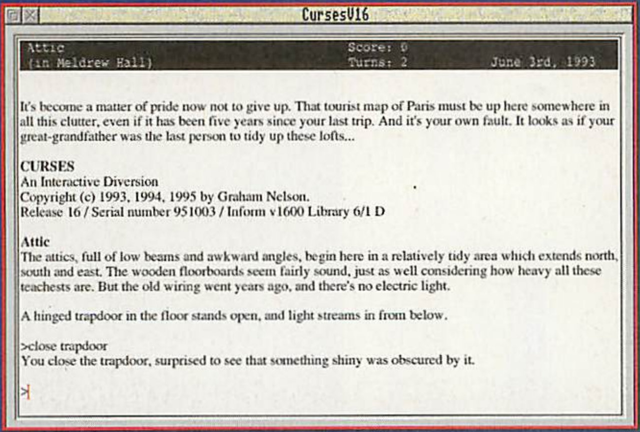
What's your game?

Picking up the pieces

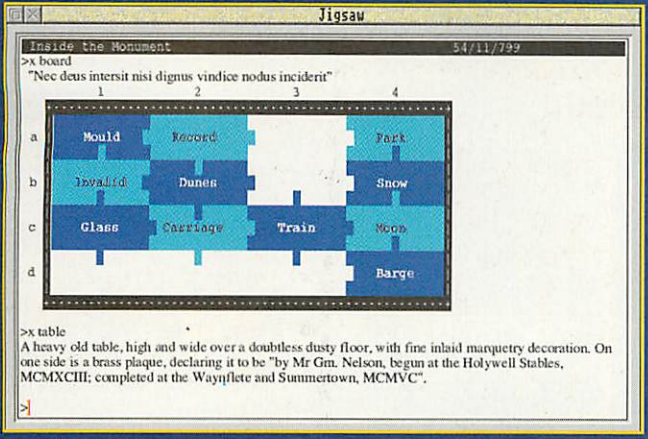
In the last few months, Graham has released his second major adventure – a historical résumé of the 20th century called *Jigsaw*. The story opens on New Year's Eve, 1999, with the last few minutes of the century draining away. While you stand there nursing a headache, an alluring stranger dressed in black drops a jigsaw piece before disappearing into the crowds. If you make it through the prologue to the interior of the monument that's at one corner of Century Park, you'll find a table with an unusual jigsaw puzzle laid out before you – and if you remember the Golden Rules, you'll soon be able to put a couple of pieces into their proper places.

From now on the pace of the story picks up, and at your next encounter Black describes the purpose of the unusual pyramid. Kaldecki had in fact invented a time machine of sorts – however, it wasn't without its drawbacks, a sizeable one being that the Kaldecki Effect could only transport you between two major events in history. This poses one or two problems, including the fact that to demonstrate or test the time machine, you have to be standing at a turning point in time anyway – as Black explains, 'Tuesday morning in the lab just doesn't cut it.'

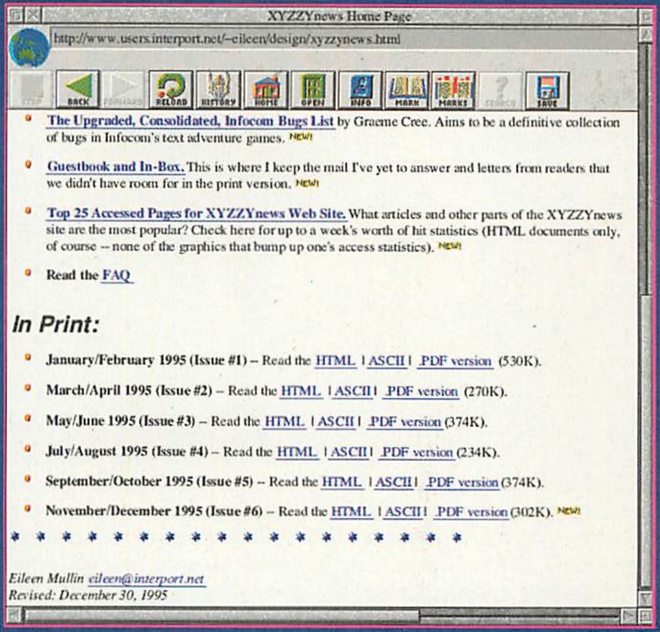
Undaunted, Kaldecki set about making plans by which the time machine might be brought into operation and its powers demonstrated, hence Century Park and the party to end all parties. Black is determined to use this opportunity to bounce round history, changing it for the better and proving Kaldecki's genius. If you want to get back to find your home in the same state as you left it, you have to



Text adventures can produce a good atmosphere



Putting the pieces together



And the end of the line

unpick the alterations before they take effect. You're able to use the jigsaw to follow Black through time, but you need to collect the pieces in order to do so, and they have a habit of being hidden in the strangest places.

There are 16 zones in *Jigsaw*, each with a temporal crisis to resolve. They range from the assassination of Archduke Ferdinand, triggering the First World War, through the discovery of penicillin to the first successful voyage of Orville and Wilbur Wright's flyer. All the scenes are highly detailed and historically accurate, and I found that to be one of the enjoyable features of the game – history was never one of my stronger subjects, but *Jigsaw* brings the events it portrays to life in a particularly absorbing way.

To add a little background, Graham has included footnotes for each of the 16 sections which reveal more about the event that the player had just experienced, and they make fascinating reading. Dare I say that the game might even be of use in educational circles?

I can't say too much about the plot without giving answers away, but I particularly enjoyed the episode set on the moon – once you've landed in the right spot and got to grips with the buggy, you have to tackle a radioactive repair job that requires a steady hand and a spot of programming. A couple of clues to help you get started; try wandering round the back of the beer tent to find a few important objects, and bear in mind that most guns have safety catches.

I struggled with the parser once or twice, knowing perfectly well what I had to do but unable to persuade the program to accept it. Still, a little patience and some lateral thought pays dividends. It's obvious that Graham has invested a lot of work in this production, and its quality really does shine through – even if you don't think interactive fiction's your scene, have a go at this one; I found *Jigsaw* to be pleasantly accessible and I recommend it highly.

Finding an interpreter

In order to play these Infocom-format games, you need an interpreter for the Acorn – there are several available and a couple have appeared on past *Acorn User* discs, but Kevin Bracey has just released what he hopes to be the ultimate in interpreters. *Zip2000* allows the user to run an Infocom game file in a window with the usual features, but it provides a great deal more support than that offered by earlier programs, including the ability to handle all the Z-Code versions from 1 to 8. Graphics and sound are catered for as well as timed input, and all the text is displayed using outline fonts, making the games a pleasure to read.

The interpreter is available in two versions – one is freely distributable but lacks some of the features for the use of version six files. The registered version costs £10 but has full version 6 support as well a whole host of additional utilities. If you want to get in touch with the author, you can do so by writing to him at 36 Field View Drive, Downend, Bristol, BS16 2TT or by E-mail at kevin@iota.co.uk.

The Interactive Fiction Archive

A good way to start yourself off in the world of interactive fiction is to pay a visit to the IF archive at ftp.gmd.de. Contained here is a huge array of interpreters, hints and games that can be downloaded by anonymous ftp – Kevin Bracey's Zip2000 interpreter resides in the directory */if-archive/infocom/interpreters/zip* and a wide selection of suitable game files can be found in */if-archive/games/infocom*, including Graham Nelson's *Jigsaw* as well as the latest version of his earlier title *Curses*. For those who like a challenge, Gareth Rees has released a game named *Christminster* – although the start of the adventure is somewhat demanding, I'm told that the effort spent getting through it is well rewarded.

If you want to try your hand at writing a bit of interactive fiction, you could download Graham's *Inform* compiler from the */if-archive/infocom/compilers/inform* directory. There are some detailed manuals and tutorials there to explain how you go about it, and several pages exist on the Web to give you some more guidance.

Finally, there are two newsgroups for the discussion of these topics – *rec.arts.int-fiction* and *rec.games.int-fiction*. If you don't have net access, drop me a line with a stamped addressed envelope and a disc, and I'll see what I can do – it's also possible that some of the above will be appearing on a future *Acorn User* CD-ROM.

Take a look and see what you think; they've definitely been successful at keeping me tied to the keyboard.

Steve Mumford

Stryker's Return

Steve Mumford talks to Godhead about John Stryker's latest escapade.



Several months ago, I mentioned that Stryker's Run III was due to be released for the Acorn – shortly after that I lost contact with the developers and heard several rumours about the sudden demise of the programming team. Judging from the screenshots and plans I'd received, we were going to miss out on a great game.

However, I'm happy to announce that the survivors of the old team have formed a new group and the game's coming along in leaps and bounds. As you can see from the screenshots the graphics are particularly advanced for an Acorn release, and I've been promised gameplay to match.

Here's a dash of background information to whet your palates. Once again, you play the part of John Stryker, and this episode sees you trapped in a city in the midst of a sizeable riot. Stryker is currently being pursued by hordes of anarchists as well as the police force, and it's your task to guide him out of danger, completing various objectives on the way.

However, since we last saw him in action back in 1987, Stryker has picked up a substantial amount of martial arts training and can now kick and punch his way through the opposition, as well as having a wide variety of pyrotechnic devices at his disposal. The game has been designed with the Risc PC in mind, but it's possible to disable some of the more processor-intensive features for the older machines on the market. The *Godhead* team consists of David Jeffries, Mike Wilson, Toby Haynes and Mark Walters, and I've been chatting to David about their project.

How did you get together to form Godhead?

The original team that was working on Stryker's Run III collapsed, leaving only two of us on the project. Mike and I then spent several weeks trying to put together another team using our contacts on the Internet – eventually, we brought in Toby to create some level graphics and Mark for the music.

How did you produce the animations and graphics for the game?

For the character of John Stryker we needed footage of some impressive karate moves, so we went to the Northern Karate Association and filmed some of the country's top experts in motion. The film was digitised on a Risc PC with an Eagle M2 card – the graphics were then converted into a format that we could read with Deluxe Paint on an Amiga. This was necessary because the Acorn currently lacks quality software capable of producing suitable character animations. The number of frames that Mike had to process was in the thousands, so it took several months of hard work. Some of the backgrounds were drawn on paper before being scanned into a computer but most were designed and drawn in art packages on Risc PCs by Mike and Toby.

Does the game have any special features to take advantage of the Risc PC?

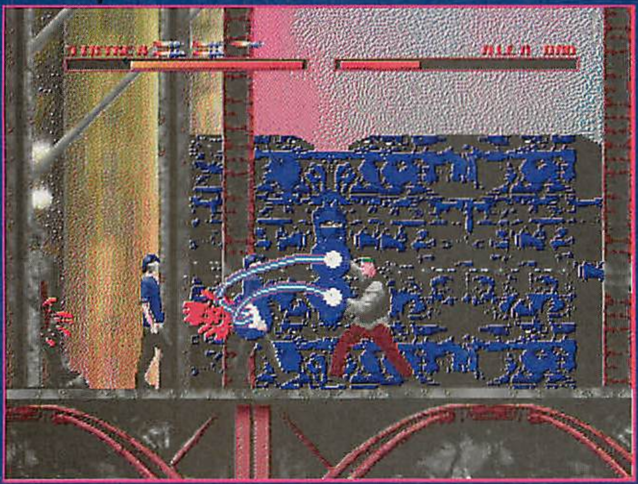
There are quite a few features that were simply too processor intensive for the slower ARM machines, including 16-bit sound and music, rippling water reflections, a transparency effect for the explosions and the lighting, higher resolution screen modes and various other bits and pieces.

How difficult did you find the process of coding the game?

It wasn't easy! We wanted the game to incorporate the fighting of Mortal Kombat, the platform style of Flashback and the firepower of Turrican III – all in one program that runs at an acceptable rate on the ARM2 as well as being able to show off the power of the Risc PC. To keep the frame rate up, we were forced to write about ninety percent of the code in assembler, leading to faster execution but longer development times.

The trickiest parts to code were the fighting routines. At a first glance, products such as Mortal Kombat or Streetfighter might appear easy to write, but creating realistic and playable fighting games is difficult. We've made the basic attack moves easy to control but some of the more complex techniques require practice, so only the best players will complete the game.

Stryker's Run III will be released by Davyn Computer Services in the near future, and you can get in touch with them at *The 'Workshop', off Princess St., Sandal, Wakefield, West Yorks., WF1 5NY.*



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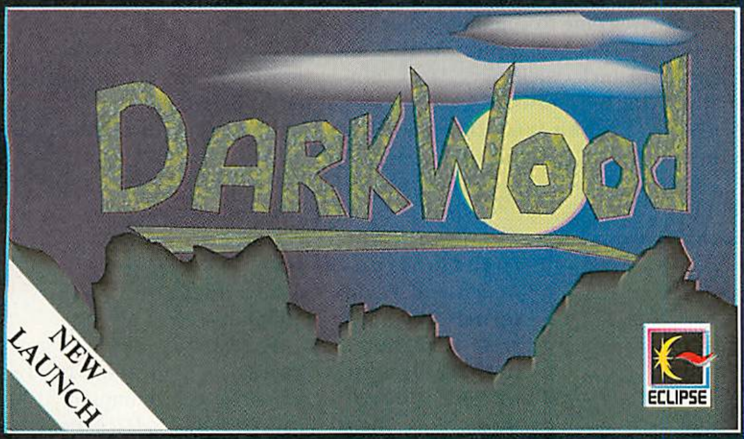






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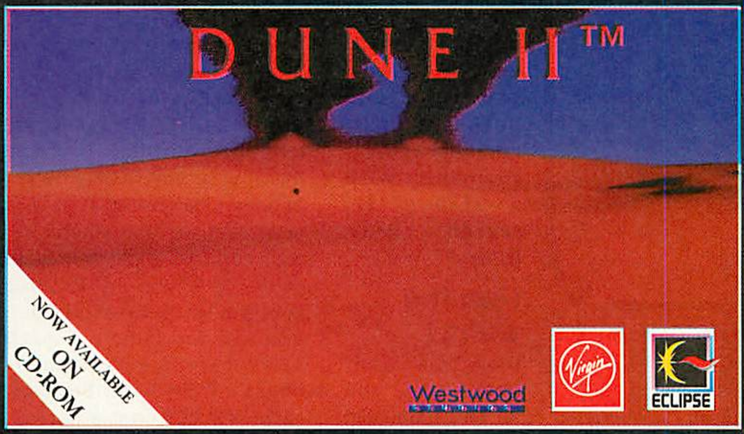






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Letters



More than a fad

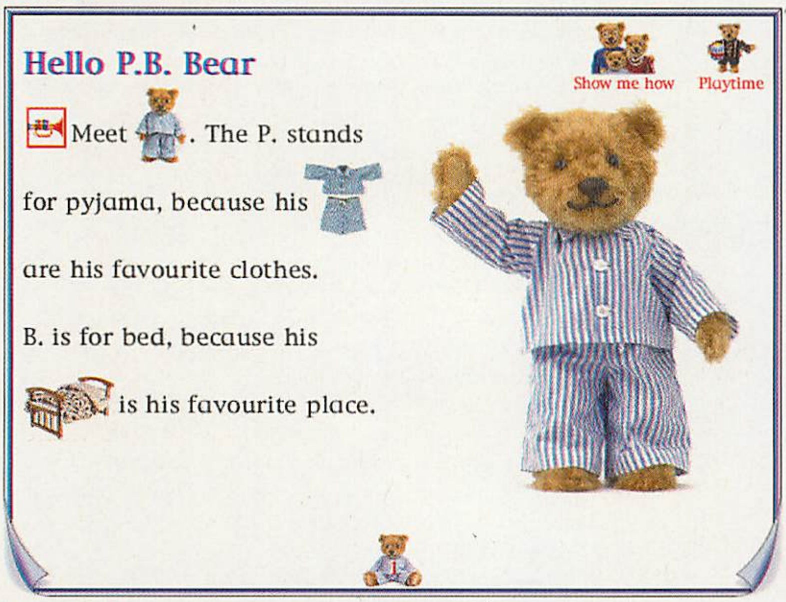
It's an interesting statement you made in your January 1996 editorial, that the Internet is just a fad. I don't know how long you've been using it – maybe you only noticed it this time last year when the mainstream media got their teeth into it – but it's been going twenty years, which is a bit long for a fad. I'd say that the media obsession with it is certainly a fad though.

It won't be 'replaced by something more useful', to paraphrase you, but it will undoubtedly *evolve* into something globally accessible and embracing all other means of communication, both broadcast and person-to-person.

Adam Curtin
adam@ifeng.demon.co.uk
http://www.ultranet.com/~acurtin/adam.html

I've been aware of the Internet for a while. I had an account on a university mainframe in 1977, and there was a direct line to my house in 1969, though I have to admit that this was for my mother to use to allow her to program from home.

While I agree that the Internet may have been around for long enough not to be called a fad, the current hype surrounding the Internet most certainly *is* a fad, although what everyone is obsessed with bears about as much relation to the Internet proper as Atlantis does to Rockall.



The arrival of Dorling Kindersley's *PB Bear* CD-ROM on the Acorn platform is welcome, but is there any more good news?

Where do you draw the line between something 'replacing' something else and 'evolving into' it? Was the BBC Micro replaced by the Archimedes, or did it evolve into it? What about the change from the A5000 to the Risc PC?

Well, whatever semantics are used, I'm sure that we both have high hopes for the Internet's successor. (DM)

Compuserve and Psion

It's good to see the article by Mark Moxon in the current issue promoting the use of the Pocket Book or Series 3a for e-mail. One thing he didn't mention about CompuServe is that there is a superb Psion area in the Palmtop Forum there. It is frequented by a host of helpful, friendly folk from literally all over the world who use these lovely little machines extensively.

Among the vast library of PD and Shareware it contains is an excellent OLR (Off-Line Reader) for CompuServe, called *ReadCIS*. It is Shareware (costing around £15 to register), and is written and supported by one of the Forum Sysops. It automates the whole process of collecting and sending e-mail and Forum messages without the need to delve into scripts or anything more technical than your modem's initialisation string. You don't even have to use the 3Fax – I use my USR Sportster via the A-Link and a home-made null modem adaptor – although the 3Fax is the most elegant solution, especially when travelling.

You might like to mention some of this information to complement and extend Mark's article. I regard the Palmtop Forum as the most important accessory for my Psion, and would wholeheartedly recommend it to any others, whether users or programmers. There are several Acorn owners who use it, but more would be very welcome to counterbalance the PC and Mac owners. With a bit of luck, we'll have Mark joining us sometime.

John Woodthorpe (using *ReadCIS* on a Psion Series3a)
Compuserve

Thanks for the information. Acorn and Psion owners often gel well together – not just because of the Pocket Book, but because both companies are interested in producing compact, well-engineered solutions, and both are small entrepreneurial companies with a strong research bias. (DM)

I am the walrus

I saw in a recent letters page you wondered what had happened to Sandie The Walrus, well, I can tell you:

He left the Acorn world, and got a PC. He's now a second year computer science student at UCL, just like me. He is one of the best in the year at C++, and the other programming-type courses (naturally). I think he'll be glad to know the Acorn world hasn't forgotten him, so I'll show him the letter.

And yes, he really does believe that he's a walrus.

Ampy
a.pereira@cs.ucl.ac.uk

And he should know; who are we to argue? (DM)

The need for speed

It is good to see a really upbeat dynamic management firmly in place in Acorn Education and Applied Risc Technologies – let's hope that it hasn't come too late.

Acorn needs StrongARM now. A recent *Which Magazine* comparison of Pentium machines with a PowerMac and a Risc PC did not rate Acorn's product at all highly. It is easy to criticise their criteria and to wonder if their reviewers had even seen an Acorn machine since BBC Micro days.

I doubt if even the most hardened Pentium/Windows 95 user would complain if his inefficient, office-heating productivity downgrader was taken away from him once he had used RISC OS on a Risc PC for a week or so.

Unfortunately, people don't have that sort of time to be convinced. What does excite people – even if it is illogical and unreasonable – is power. Acorn users have a long history of having better machines than most, and we have an efficient environment in which to make good use of real power. With Pentium-based machines now available for under the magic £1000 the time has come to flaunt a little Acorn brilliance again. I don't want a poxy 25 per cent speed increase by upgrading my Risc PC to an ARM710 processor, but give me 150MHz? Yes!

I am also disturbed by the loss of major software writers from the Acorn platform. Computer Concepts refuses to upgrade *ArtWorks*. Colton,

now a subsidiary of a major PC/Unix focused company is offering less than the excellent support that I have been used to for *Fireworks*. I wonder how long it will be before the fabulous Finn brothers use their profits to switch *Sibelius 7* to the Power PC and leave RISC OS behind? How long too before Computer Concepts finally abandons *Publisher* and the whole Acorn scene?

What I am saying is that Acorn must address the software issue and get the major producers back on its side. It is good to see this happening in the CD-ROM area with Acorn versions of Dorling Kindersley and Microsoft titles starting to appear.

Obviously though, it won't matter how fast and wonderful the next generations of the Risc PC is if there is no software to run on it. Taos may be the answer eventually, but RISC OS needs to survive as a viable platform for a good few years yet.

As a first step, where are the MFC libraries that CC says it needs in order to be able to produce *ArtWorks Pro*? I am not a programmer and don't even understand what these are, but can it really be all that difficult? Surely if ARM processors are going to appear in lots of high tech products next year, people are going to need to program them efficiently?

Andy McMullon
County Antrim

Porting the MFC or equivalent libraries to RISC OS would not be an easy task, but this is nonetheless the sort of support that Acorn should be giving to developers. On other platforms, development environments are written by third parties, and Acorn sometimes takes the view that this isn't its job. However, on the Acorn platform, it would be impossible to make this sort of existence pay; your product would only sell to software developers, and probably only the high-end ones at that. The only possible solution is for Acorn to do this work itself, as a 'loss leader' to encourage an abundance of good software.

Acorn does make an effort in this direction. As is stated elsewhere in this issue, it is keen to encourage Clan members to write software. No one should scoff at the ability of enthusiasts to write competitive applications, but even so this isn't really what some of the bigger developers in the market are looking for.

Acorn Education concerns itself solely with selling and marketing a product. All the development is left to ART. The danger is that ART, as it branches out into other applications for ARM technology, becomes more and more concerned with proprietary routines for expanding JPEGs or routing network packets, and less and less with developing the RISC OS Desktop. (DM)

FistLore? No thanks!

I am writing to tell you how much I deplore the choice of the 'game' *FistLore* for one of the discs on the current issue of *Acorn User* in view of the present social climate, and in particular today's headlines about the murder of Philip Lawrence. No doubt it was intended to boost interest in your magazine and as a Christmas present for your younger readers, but we all know one youngster who cannot have his Christmas present.

I expect a more responsible attitude from publishers such as yourselves. I know that the game would be sold without it being on the cover disc, but it would be better for it not to have this extra publicity. I have *Acorn User* from 1991, but it looks as though I won't need any more space on the bookshelf for future issues.

D K Howard
Levenshulme

The *FistLore* demo was not intended for our younger readers – one of the reasons for putting the *Global Effect* demo on the disc was to give a constructive, non-violent game that could be offered as an alternative, as I was well aware that many people would prefer not to run *FistLore*. (DM)

Viewpoint

There's a familiar conversation, and it goes a little like this:

'Acorn?' says the PC user. 'Are they still making computers?'

'Indeed,' the Acorn user replies, with a touch of pride, 'and very good they are too.'

'What processor have they got, then? 486? 586?'

'Actually, they've got their own processor, called the ARM. It's much better than anything in a PC.'

'How fast does it run?'

'Well, the fastest ones run at 40MHz...'

'40MHz?' the PC owner screeches, as he rolls around the floor laughing. 'My *tortoise* runs faster than that, and it hasn't left the compost heap since '89.'

'Ah, but you're just stuck in the PC way of thinking, where it's all about making bloated code run faster,' smiles the Acorn owner, undaunted. 'RISC OS is a very efficient operating system.'

'Are you trying to tell me that this thing doesn't run Windows? What use is that? I won't be able to run anything.'

'You don't need to. All the Acorn software does exactly the same...'

'Listen, I've seen the Acorn software. It's all aimed at schools. Haven't you got any grown up software?'

At this point, most Acorn owners rise to the bait, reel off a list on non-educational titles and then write angry letters to *Acorn User* suggesting that if only we didn't cover education in the magazine then the Acorn would instantly gain acceptance by all the 'serious' users. We periodically get calls for an 'education-free' issue, as if a gimmick like that is suddenly going to make Mike O'Riordan think 'Hey, I should drop this education nonsense and start marketing this computer to big business.'

Ludicrous. For a start, if Acorn didn't sell well into education, it wouldn't exist at all. It's a less important part of the magazine's market, because one school may have twenty machines but will only take one or two issues of the magazine. This isn't the ludicrous part, though.

The ludicrous part is that a PC owner should think so little of a computer used so widely in education. There is no more hostile environment than a school classroom, and no harsher critic of a program than a child. That Acorn does so well in this area and continues to be the first choice for teachers is an indication not of the immaturity of Acorn machines, but of their ease of use.

If this is the case, why are they not the standard in other areas? Because IBM and Microsoft – or Apple in other areas – got there first in bulk. It is easy to underestimate the difficulty of dislodging an established standard. Acorns may be demonstrably more productive that PCs, but that isn't actually the case if everyone around you is using PCs and you need to exchange data and personnel with them. Re-training the staff of a company to use a new computer system is very expensive, as is buying a completely new set of software.

The real question is not 'Why can't Acorn break into industry?' but 'Why hasn't it been wiped out in schools?' The answer to this is partly historical – here *Acorn* is the established standard. However, Acorn also has such an advantage in terms of software base, ease of use, longevity and expert knowledge of the market that even with PCs seen as the standard machines it is resisting change.

Be proud of the fact that Acorn is strong in education. It's an awful lot harder for a computer to teach someone than for it to do accounts and in the final analysis it's probably a lot more worthwhile, too.

And finally...

Goodbye. This is my last issue as editor of *Acorn User*, as I'm leaving to design Web pages for Computer Concepts/Xara. My replacement, Steve Turnbull, will be known to many of you as the editor of *Acorn Computing* throughout its life, although his association goes well back into *The Micro User* days. I've enjoyed working on the magazine, and to everyone who's written to me or spoken to me at shows to let me know what they thought, I'd like to say thank you for all your comments, good or bad.

David Matthewman

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Many computer users feel that a graphics tablet is more natural to use than a mouse and without doubt it gives a much faster, smoother and higher resolution response. The mouse remains functional and can be used at the same time as the pen — however the pen has such a natural and precise feel, you will probably prefer it for many operations such as moving windows, drag and drop, region selection etc.

The new (approximately A6) ArtPad tablet offers a superb specification, even by Wacom standards; resolution exceeding 2000 dpi, 200 samples per second and 256 levels of pressure. All Wacom tablets include a cordless pen for added ease of use and flexibility.

The tablets are pressure sensitive, so in combination with suitable applications they can produce realistic effects such as variable width (the Eesox ArtWorks pressure sensitive tool) or variable density airbrush painting (PhotoDesk). The Computer Concept's drivers will be compatible with these and other software that can take advantage of the pressure information, such as Studio 24 and DA Picture.

Computer Concepts can supply the tablets with either Photodesk or the Eesox Pressure Tool at special prices. **PHOTODESK** is a photo retouching package from Spacetech, which offers a wide range of advanced image manipulation features; for example an airbrush, paintbrush and magic wand, full 24 bit colour support, the use of virtual memory, OLE with Impression, complete undo, effects such as colouring, toning and masking, motion blurring, cloning and smudge and smear.

The package contains the Wacom tablet (A6 ArtPad, A5 or A4) and manual, a cordless pen, Computer Concepts driver software suitable for all models of Acorn RISC computer (A3000 must have serial port upgrade) and PC drivers. Requires 1Mbyte or more.

Price: A6 ArtPad & drivers: £169 + VAT (£198.57 incl.) A5 tablet & drivers: £399 + VAT (£468.82 incl.)
A4 tablet & drivers: £549 + VAT (£645.07 incl.)

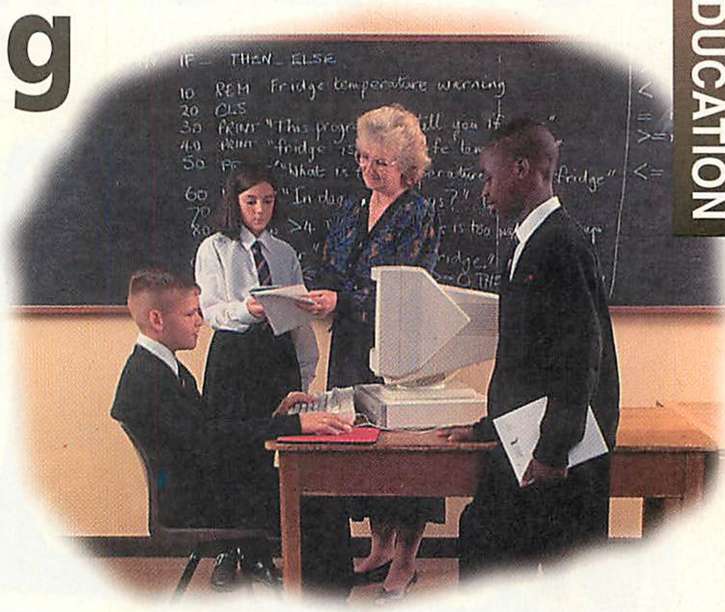
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Programming in schools



Programming used to be a main part of the computing syllabus, but much less emphasis is placed on it these days.

It's funny how topics seem to come around in cycles. One month I receive a batch of letters on one topic, and then hear nothing more about it for months. In the meantime, another batch of letters on a different topic arrives.

The cycle appears to have come around to teaching programming in school and typical of the several letters I received on the subject is from sixth former Francis Cheeney from Penicuik High School in Midlothian. Francis is studying higher grade computing and part of the syllabus demands that an investigation is carried out into one aspect of computing. He has chosen *Programming in Pascal* and wants to know more about it, including its uses, and if it is still taught in schools.

I personally haven't recently heard of anyone teaching Pascal in schools or colleges. As far as school is concerned, there has been a general swing away from teaching programming skills (apart from Logo and control commands) towards a broader Information Technology capability.

Several years ago, as part of the 'O' Level Computer Studies course I was teaching, I initially taught BASIC (and later Pascal) and thoroughly enjoyed it, although with hindsight I'm not sure all of my students did. For many it was a means to an end; they wanted Computer Studies because they perceived it to be a valuable exam and therefore if they had to learn to programming skills to pass Computer Studies, then so be it.

Some really did enjoy it and I believe gained a great deal from it although I frequently wondered if there wasn't something more valuable they could be doing. For many, learning to write programs was tedious beyond belief and it gradually led to disenchantment and dissatisfaction.

Teaching programming in schools also led to an enormous amount of criticism – and in my opinion, quite rightly so – because students were too frequently being taught bad programming practice by teachers who, in many cases, had done little more that read a computer manual. This in turn led to a general criticism of the language most commonly taught in schools – BASIC. The claim was that BASIC – even the highly acclaimed BBC BASIC – led to bad programming techniques.

I always felt this was a little harsh and slightly unfair, and rather like criticising the shape of building bricks because they allowed the builder to erect crooked walls. In fact, when you looked at the arguments, what most people were complaining about was the existence of one BASIC command – GOTO – which led inexperienced programmers to develop what is best described as 'spaghetti code' where the computer was being forced to jump around the program while trying to interpret the instructions. Programs written in this way are notoriously difficult to maintain because it's almost impossible to find the place which needs attention.

That was the kiss of death for BASIC and led to a move towards other languages which actively prevented unstructured coding. Of all the alternatives available in the early to mid 1980s, Pascal was the language most people in education chose.

Unlike BASIC which is an interpreted language, Pascal is compiled. The idea is that the code could be written on any computer as a text file, and then compiled on the computer which was intended to run the program. As far as teaching it in schools was concerned, the examining boards began placing less and less emphasis on programming, presumably in the wake of the mounting criticism.

As for the uses for Pascal, presumably they are the same as for BASIC: fine as an introduction to programming, but not widely used for 'real' applications. If you're intending to learn to program seriously, I suggest you enrol on a college course that offers C or C++ . If you want some advanced warning of what you might be letting yourself in for, follow Steve Mumford's series on C programming, but be warned – some people take to program writing like a duck to water, others never get past the first sentence (and it's nothing to do with intellect).

Electronic pen pals

Roger Terry teaches IT at Hinde House School in Sheffield. He is particularly interested in French or Spanish pen pals for his students as this supports their language courses. Mr Terry's students may be contacted on Sledgehammer@tyhh.demon.co.uk.

Electronic professionals

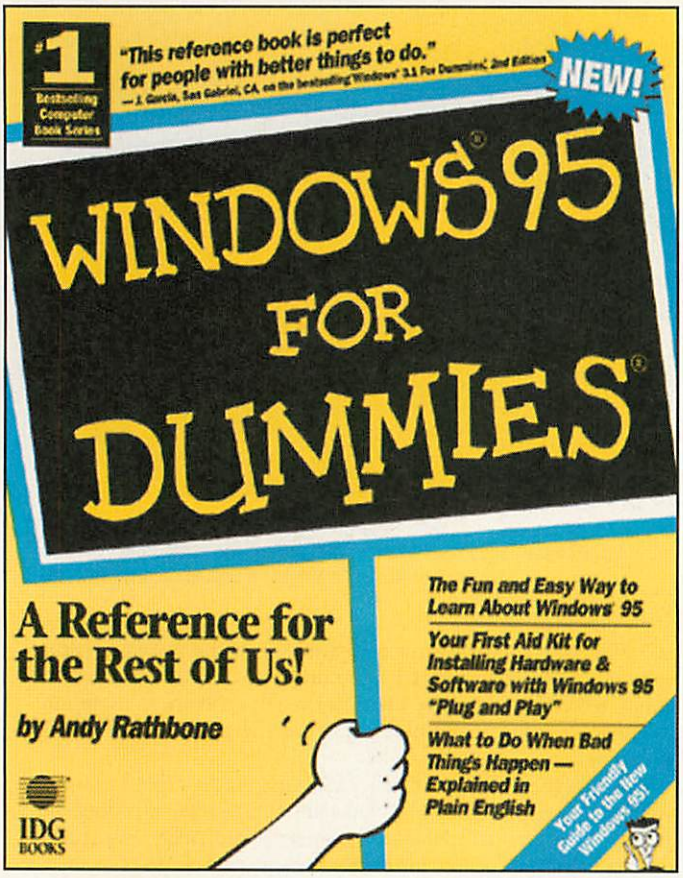
Paul Theobald works for Data Connection Ltd, which is based in Enfield, North London, with offices in Chester, Edinburgh and Washington DC. His company writes computer software, mainly for PCs and various Unix boxes. Data Connection's specialism is in writing complex software in the areas of communications, collaborative projects and retail. Paul (who was at college with the *Acorn User* editor) will be happy to receive e-mail about his work on pt@datcon.co.uk.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: gpreston@arcade.demon.co.uk.

Windows '95 for Dummies

New



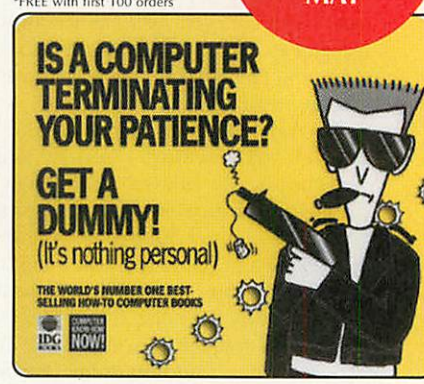
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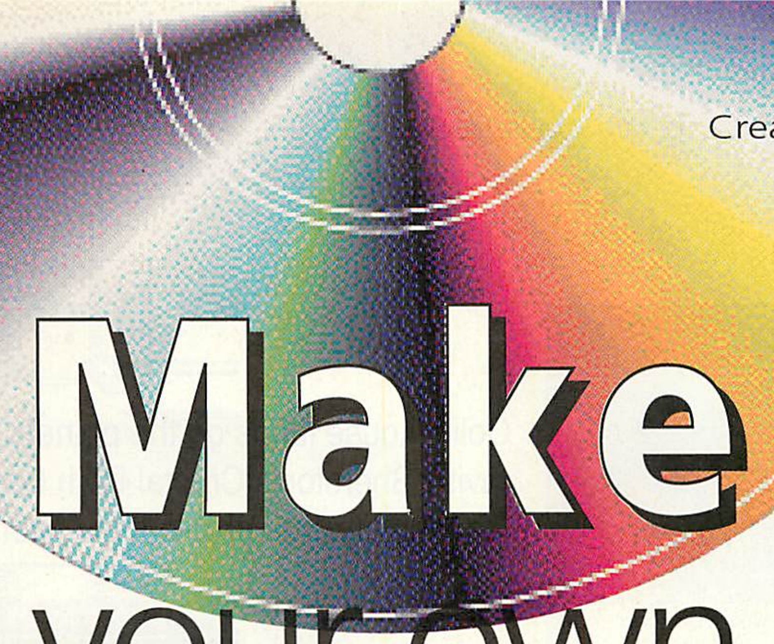
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Make your own

In the first of a three part series Geoff Preston looks at what is required to produce your own multimedia CD-ROM.

Not very long ago, creating a CD-ROM was only for large companies. Recent new products and price reductions of existing ones means creating your own CD-ROM is now well within the domain of the home or school.

Many of the commercial CD-ROMs currently available have been written from the ground up by the authoring company. Software houses like Interactive Learning Productions, AVP and Anglia have their own multimedia 'engine' specifically written by themselves for themselves. But now several authoring programs will enable you to produce very creditable resources either for school, for use at home or for marketing.

The authoring program

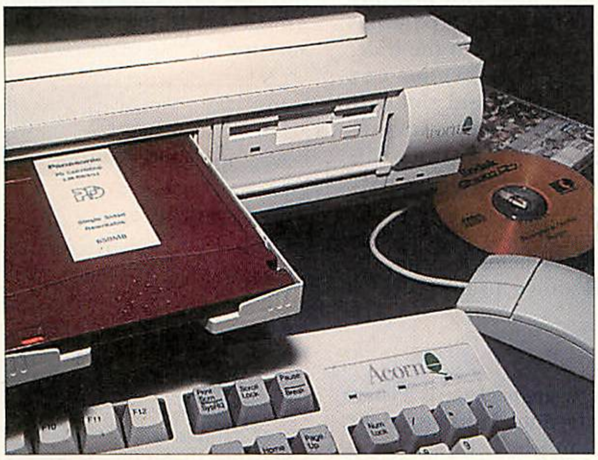
Assuming you're not going to write the engine yourself, you'll be looking for a multimedia creation tool. As far as the Acorn user is concerned, there are several possibilities although I'm going to look at just four next month: *Genesis* from Oak Solutions, *Magpie* from Longman Logotron, *Ultima* from SEMERC and the latest program of this type, *HyperStudio* from TAG.

Storing the masterpiece

A CD-ROM typically holds over 600Mb of data which represents at least 700 800K floppy discs or about half as many high density 1.6Mb discs (assuming you can fill every byte of every disc). Clearly a hard disc is required to save all this material, but you'll also need something on which to make backups. Don't even think of undertaking a task of this complexity without keeping at least two backups.

Given all the various hard disc possibilities available, I would suggest a 0.5Gb IDE or SCSI drive for the main storage with backups taken on a Cumana proTeus. The proTeus is a combined CD-ROM and optical drive which can read and write to discs capable of storing up to 650Mb of data. This product, probably more than any other, makes home CD-ROM production possible, because it gives the user a writable CD-ROM-sized disc for £39 (once you've bought the drive). If you can't buy both a proTeus and an internal hard disc, forget the hard disc but use at least three proTeus discs to save your work.

Life will also be slightly simpler if you can do this work on a machine fitted with RISC OS 3.6 as this operating system can handle discs greater than 512Mb. If you can't use RISC OS 3.6, my advice is to settle for 512Mb rather than trying to fiddle about with disc partitions which will mean a great deal of extra hassle for the sake of less than one sixth of the space of a CD-ROM.



The proTeus drive is favourite for keeping backups of your CD-ROM image on.

Additional hardware

Multimedia presentation means that graphics and sounds as well as text may be used. Included under the heading of graphics are animations and video clips.

Unless you're intending to draw or paint all the pictures yourself, you'll need an alternative method of capturing them. There are two choices: scanning and digital photographs.

Scanners are getting both cheaper and more sophisticated. Pictures can be scanned in either black and white or colour depending on the type of model used, and sizes up to A4 are readily available. If you are scanning from a book or periodical, beware of copyright, even if you're not intending to sell your work; the same rules apply to scanners as to photocopiers.

Scanners are particularly useful for capturing not only photographs, but also hand drawings. If you're not very good with computer-based drawing/art programs like *Paint* and *Draw*, scanning is a good alternative - simply draw the picture you want on paper using pencil or ink, and scan it. The resulting sprite will be of acceptable quality but could be enhanced with a good art/re-touching program like *Studio24* or *ProArtisan*.

Digital cameras are still quite expensive but schools should be able to borrow one from their authority. With the correct digitising card in the computer it's possible to capture really good quality pictures very easily. If you can't get hold of a digital camera, it is possible to grab frames from a camcorder or even from television using the same digitising card. Computer Concepts and Sonamara produce good quality digitisers with software which are quite reasonably priced.

Sounds are relatively easy to include and the equipment to record speech can cost as little as £30. Products like SEMERC's *ReSound* and *Black Box* by Syscom Products work very well and can be used for capturing anything from a single word to a whole sentence.

There are several programs for producing animations on Acorn computers. Whichever animator you choose, you'll need one which will output files in a format capable of being read by the program being used create your multimedia production.

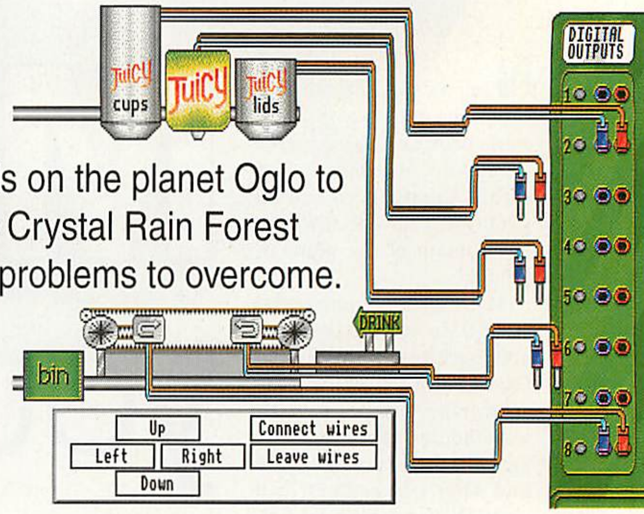
The most common is the Ace Film Format originally developed by Ace Computing and later taken over by Oak Solutions. There are several programs which output Ace Films including *Tween* by Oak Solutions, *Rephorm*, also by Oak, and the simplest of them all, *Snap Happy* from SEMERC. Acorn Replay is also a well-used format. Several programs can output Acorn Replay and most multimedia authoring tools will read this format. AU

● *Next month Geoff Preston looks at multimedia authoring software.*

Crystal Rain Forest 2 in the classroom



Mission accomplished.



Colin Rouse lands on the planet Oglo to revisit Sherston's Crystal Rain Forest and finds further problems to overcome.

Calling **Mission Control!**

Gomez the wicked scientist has escaped from prison. Parents, teachers and children who are familiar with Sherston's *Crystal Rain Forest* will want to prevent further ecological catastrophes in Sherston's latest offering, *Mission Control - Crystal Rain Forest 2.*

The land of Azon on the planet Oglo is in deep trouble as Gomez sets out on a trail of environmental destruction by producing dangerous chemicals to pollute the rivers and kill wildlife. Here pupils encounter a series of problems that introduce the idea of control technology in a logical way as they battle through the rain forest in an attempt to thwart Gomez and his plans.

The pupils' first task is to work out how to make Professor Roberts' broken drinks machine work. Only by learning to give instructions in a logical order can a soggy mess be avoided. Then it's into the Hoverheli to explore the island and track down Gomez.

A temple storing dangerous chemicals is found and these must be disposed of safely using the recycling tank which is controlled by programming a computer to do the job. Unfortunately Gomez has robots spread throughout the jungle but the children find that they can be rendered harmless by using a sequence of flashing lights if they can work fast enough.

Finally, the children discover the last temple but unfortunately this houses a collection of venomous creatures. These can only be returned to the wild if they can be correctly identified. The last box looks particularly harmful, but turns out to be Professor Roberts who had been stored with the other dangerous animals.

He has some important information about Gomez's whereabouts and suggests that a boat may be useful. The children find this on a small island in the middle of the river. They need to program the machine to build a bridge to the island. If they can do this they can set off on the treacherous journey downstream.

After a dangerous journey, the children find a small hut which conceals a chemical packing area. By studying the machinery and learning how to program it, the children can alter the program and add the magic forest crystals to each batch of chemicals, turning them into harmless dust.

They manage to find Gomez at his secret base but the area is swarming with robots so an alternative way in is needed. Using their knowledge of nature and a portable animal scanner the children soon find the entrance to a cave which will give them access. Once inside they find four pipes but only one will take them safely inside. They have to make full use of their newly learned skills to survive.

Arriving safely in the control room the children are suddenly confronted by Gomez who makes a fast exit. This leaves them with the task of shutting down the factory. They manage it but only just. This just leaves them the job of rounding up Gomez before the island can return to its proper peaceful state. Can the children succeed or has Gomez one last trick up his sleeve? You will have to complete the adventure yourself to find out.

Crystal Rain Forest 2 allows children to create, test, modify and store sequences of instructions to control events; use simulated heat and pressure sensors; investigate parallels with the use of IT in the wider world; use IT to explore and solve problems and simulate motor output control with variable power. All work in this software package is easily adapted to control technology equipment and allows key words to be tailored to suit the school's own preferred language.

In conclusion

This software package is a complete adventure in its own right and is an ideal start for any school's control technology work. With a comprehensive manual and the supporting teachers' guide, it provides a stimulus for work using real control boxes, motors and sensors. There is a teacher's page which allows the software to be tailored to the needs of individual schools and the facility to print and save selected screens.

For schools wishing to develop control technology in line with National Curriculum requirements *Crystal Rain Forest 2* is an ideal program to allow children to discover, in an exciting and stimulating way, the mysteries of control. Another winner from Sherston. AU

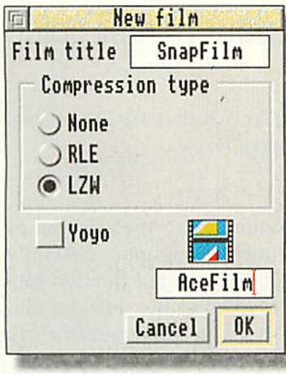
Product details

Supplier: Sherston Software
Tel: (01666) 840433
Fax: (01666) 840048
E-mail: info@sherston.co.uk
Price: £44.95 +VAT (Primary Site Licence £22.48 +VAT)

Pros: Comprehensive manual
- Teachers guide
- Adaptable to school requirements

Cons: None

The simplest **animation program?**



Product details

Supplier: SEMERC
Tel: 0161-627 4469
Price: £20 for single user copy (site licence price still to be decided)
Pros: Easy to use • For all ages • Variety of uses
Cons: Fairly basic

Dial Solution's *SnapHappy* is probably the simplest and quickest way to generate simple and smooth animations. It allows you to create animations from any other application by taking snapshots of an area of a window and saving the sequence in AceFilm format. (The PD application *Projector* will play these films.)

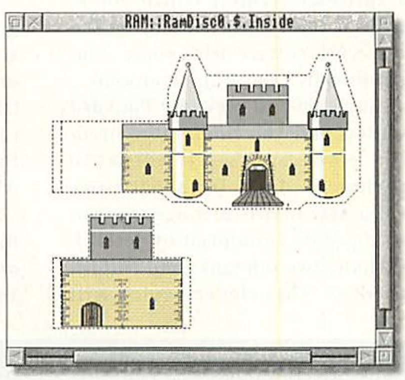
Once the program is loaded, click on the application icon on the icon bar and a small dialogue box opens. Enter the name of the film and drag the film file icon into a directory display. Next, drag the mouse pointer over a rectangular area of a window which will be the area where the animation will be created.

Every time the *SnapHappy* icon is clicked, it will take a snap-shot of that area of the window and store it in the film file as a frame of the animation. If you have drawing in *Draw* for example, you could move some of the objects, take a picture, move it a little bit more, take a picture and so on. When you've taken enough pictures, you tell *SnapHappy* to stop recording by clicking Adjust on the application icon. That's more or less it.

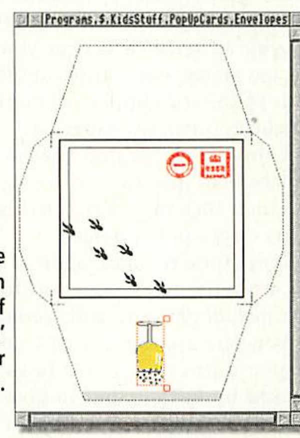
This program will have dozens of uses. Anyone who uses a multimedia presentation program that can display AceFilms will find *SnapHappy* invaluable as it is a quick method of demonstrating a technique. For example, on the cover disc is a film I produced in about 10 minutes. Primary school teachers should find it especially interesting. If you do, take a look at the education discs which come free with a year's subscription to *Acorn User*.

Pupils of all ages (even the very young) will be able to use *SnapHappy* to produce some pleasing animations. AU

Pop-Up **Cards**



One of seven pop-up designs included in the pack is castle.



Two envelopes are included with a variety of 'stamps', 'post marks' and other decorations.

A few years ago pop-up books were quite common but assembly costs seem to have now made them all but extinct. Remembering what fun they were, I was particularly pleased to receive a program intended to enable the user to create pop-up greetings cards.

Pop-Up Cards from Southern Printers is a collection of carefully produced *Draw* files of designs for a variety of greetings cards including seven pop-up cards. Included in the two-disc pack are also designs for envelopes as well as an assortment of drawings to embellish the cards.

These are available fully rendered and in outline only, so they can be coloured later if a colour printer is not available. Indeed for younger ones, it's probably better for them to colour them in.

At its simplest level, you load the required *Draw* file, print it and then cut out and assemble it with the help of the instruction manual. I felt it might be more useful to have the instructions printed out with the components of the card - in most cases there is more than enough room on the page and it would at least ensure that everyone had the instructions rather than needing to refer to the manual.

The pop-up features work well but should be printed on thin card rather than paper. Most laser printers will take 150gsm paper quite easily and this will be ideal as it's not too thick to make later cutting difficult.

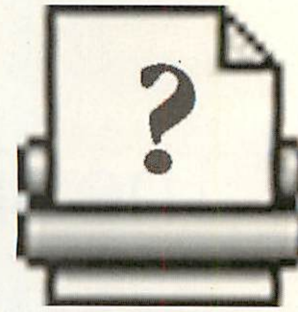
As with all cutting-out jobs of this type, a sharp knife will always give better results than scissors, but safety should be considered when handing out knives to children.

Pop-Up Cards also has files for four-folded A4 (giving A6 size cards) and 'Front/Back' type. Where this product scores is that it can be used as an introduction to the principles of pop-up design. Once the principle has been mastered, the designs can be adapted and eventually completely new designs produced.

Geoff Preston AU

Product details

Supplier: Southern Printers
Tel: (01233) 633919
Price: £14 for a single user, £24 for a full educational site licence.
Pros: Great idea • Excellent for Technology • Good introduction to *Draw*
Cons: Some of the cards are rather fiddly to assemble • *Draw* files would benefit from having instructions on them



Printing problems

Geoff Preston looks at ways of keeping your printer going.

Contact details

ReTone
Tel: 0161-839 0500
Fax: 0161-839 0600
Quill Marketing
Tel: (01603) 748002
Fax: (01603) 748003

As anyone who has a printer will tell you, the cost doesn't end once you've bought it. Apart from the paper to print on, it needs something to print with and the cost of a manufacturer's replacement laser toner or inkjet cartridges is still quite high. As a result, an industry has grown up dedicated to refilling, re-manufacturing and re-inking.

Once the laser toner has run out you have three choices. Either throw away the cartridge and buy a new one, buy some toner and refill it yourself or get someone else to re-manufacture it for you.

I've always felt slightly uncomfortable throwing away empty cartridges. In most cases, the only thing wrong with them is the fact that they're empty and once refilled should work again. Toner is dreadfully messy stuff. It's incredibly fine and sticks to anything it touches (which is what it's supposed to do). Although it is possible to refill cartridges yourself, it is just too messy to seriously consider.

ReTone will supply re-manufactured cartridges on an exchange basis. They collect the old one when they deliver the replacement and the cost is significantly less than that of a new cartridge, and in many cases can last longer.

They stock re-manufactured cartridges for virtually every laser printer and the cost includes a wand and corona cleaning buds where appropriate. It's not possible to give a price for every laser cartridge stocked by ReTone, but to give an example, a cartridge for a Canon LPB-4 is £36.50 and for a Canon LPB-8 is also £36.50. Carriage on orders over £100 are free, under £100 is £5.

Vince Stapleton of ReTone will supply the first cartridge on a 60-day trial. During that time he'll contact you to find out if you're happy with it. If you're not, he'll replace it or refund the cost.

Inkjet options

Like laser toner cartridges, throwing away inkjet empties seems over-extravagant and once again refilling is the solution. This however, is a job which can be carried out at home or school providing certain precautions are adhered to – don't wear your best shirt and don't wipe your hands down your front.

As long as you are careful, the ink shouldn't get over your hands. In fact, I find I'm cleaner after filling an ink cartridge than when I used to fill technical pens.

Hewlett Packard and Canon inkjet cartridges are well worth filling up to six times. A refill kit usually costs about half the cost of a genuine replacement cartridge, but you get enough ink to fill it twice or three times.

Of all the types I've tried, JetFill is by far the most convenient. It comes in a sort of syringe and the box is used as a cradle to hold the cartridge securely whilst you're filling it. Even so, it's worth securing the box to the work surface with some 'blu-tac' so that it really can't wander around.

If you have several Hewlett Packard inkjet printers and you find you're needing to refill lots of cartridges, it will pay to buy a machine to do it. For about twice the cost of a new inkjet cartridge you can buy CartridgeMate (produced by JetFill). The kit includes two ink tanks and will fill two cartridges. This clever device will unplug, refill and reseal HP5126A cartridges automatically.

Bubblejet printer

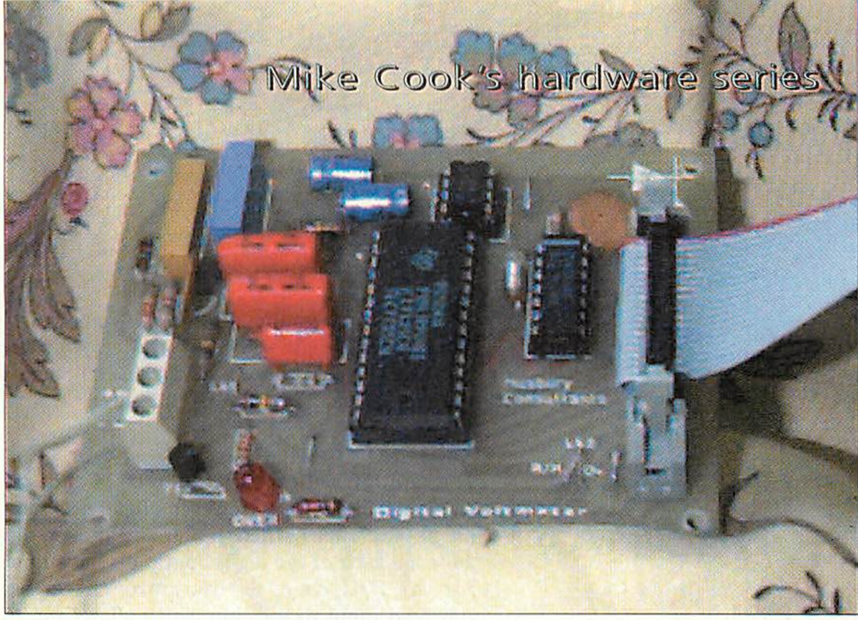
Opinion is divided as to the wisdom of refilling some bubblejet printers. Certainly you must take great care not to allow any foreign particles to enter the cartridge and ensure you are using good quality ink from a reputable source. Follow those simple instructions and you should have no problems.

I think the trick here is not to be too greedy with the potential savings. Don't attempt to refill a bubblejet cartridge five or six times. I refill each of the four cartridges on my Canon BJC-800 twice only then buy new cartridges. By only refilling them twice I've had no problems with it whatsoever.

Quill Marketing stocks everything for inkjet and bubblejet printers including original cartridges, refilled cartridges and refills to fill your own. AU



Save some money – refill, re-manufacture and re-ink.



Run the RISC

Mike Cook looks at a digital voltmeter, and updates a BBC project for the Archimedes.

Someone was asking me the other day how they could measure a voltage accurately using a computer. 'Simple,' I said, 'just use my DVM circuit, it's in the er ... um ... now when did I do it?' Well it turns out that it was over ten years ago and while the fundamental circuit is still sound the computer it was designed to run on is not.

Back in the April 1985 issue of *The Micro User* I described how to make a Digital Volt Meter (DVM), however the computer it was designed to connect to was a BBC model B. Most of the time changing computers does not make much difference but this time it does, so I thought I would upgrade the project to use the latest machines.

It turns out that this project needs a bi-directional printer port due to the speed of the signals. Now my bi-directional emulator circuit cannot in fact cope with this speed. However, for those of you with older machines I will be making an interface in a few months that you can use with this DVM.

Circuit design

Let's have a quick re-cap on how the circuit works; this is shown in figure 1. The circuit shows the pin connections to a RISC printer port and the heart of it is the DVM chip an ICL 7135 chip. This is a complete four and a half digit DVM with multiplexed BCD outputs. What that piece of techno babble means is that it will read a voltage between zero and 1.9999. In other words there are four digits of precision and the last digit can be either a zero or a one. To my mind this is only a fifth of a number but the rest of the world calls this half a digit so I'd better keep in step. The BCD bit means that the output appears as Binary Coded Decimal numbers – however, you need four bits for each number so this would require 20 output pins. Therefore the output is multiplexed; each number is placed in sequence to the same four wires. There are other wires telling you what digit is currently being output. Other DVM chips output multiplexed segments for direct driving of a 7 segment display and yet others output the complex waveforms needed to drive a liquid crystal display. However, the BCD output is ideal for reading into a computer.

The input voltage is applied across the Hi and Lo inputs, there is a filter here to prevent mains hum getting on the inputs. The inputs are differential, that is the reading will be the difference in voltage between these two terminals. The link Lk1 connects the Lo input to earth so that you can measure voltages with reference to earth by just connecting it to the Hi input.

When designing circuits to convert from an analogue voltage to a digital number there is a three-way trade-off, between speed, cost, and resolution. A DVM trades speed for resolution. This means that it can only make about three samples per second but the resolution is one part in 20,000 – that's better than 14 bits. In practice it's not quite that good as there is a little drift in the least significant digit, but nevertheless it is quite accurate. Couple this with the fact that the DVM will measure negative voltages as well as positive ones and you get a very handy device. Most DVMs work by the dual ramp method, shown in figure 2. This is where a capacitor is charged proportionally to the voltage you want to measure and discharged at a fixed rate. The time it takes to discharge is therefore proportional to the input voltage.

The accuracy does not depend on the actual discharge time but the ratio of the charge and discharge times, and because these are controlled digitally they are very accurate. In the end the limit on accuracy comes down to the quality of the integrating capacitor C1; the better it is the more rapidly you can take the readings. I used a polyester capacitor as it represents a good compromise between quality and price. With this I could get a steady reading with a sample rate of two per second, if I went faster, at three per second I got a 0.7

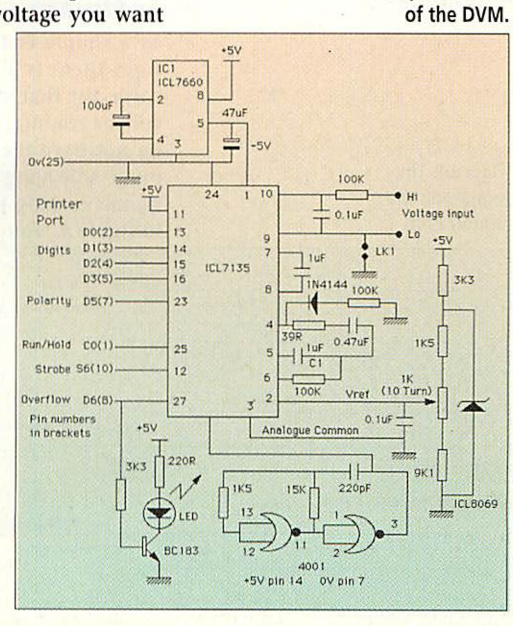


Figure 1: The complete circuit of the DVM.

mV drop in the reading. However, if you can sacrifice the last digit you can go faster. A better, polypropylene capacitor will cost several pounds but should enable you to go at full speed.

Taking readings

The multiplexed outputs of the DVM chip are changing all the time. However, after a new sample has been taken, there is a strobe pulse on pin 26 when each of the digits appear on the output for the first time. Furthermore, there is a run/hold input to the chip which allows you to control when it takes a sample. In the original design this was held low, so that as soon as one conversion was completed, the next one started. This time I am using that pin to command a conversion when one is needed, so all it needs is a quick blip to set it going.

The strobe pulses are shown in figure 3 and they are a bit of a problem. The problem is that they are very narrow, so short in fact that you can't guarantee you will see them if you are looking with software. Even with the speed of the RISC chip the computer could be somewhere else servicing a fast interrupt and miss the strobe. With the model B, I connected the strobe to a control input of the user port. This was configured to latch the strobe and so I had up to 1.4ms to read the data. It's not quite as simple on the RISC machines but it can be done, because Acorn has done most of the work for you in the operating system.

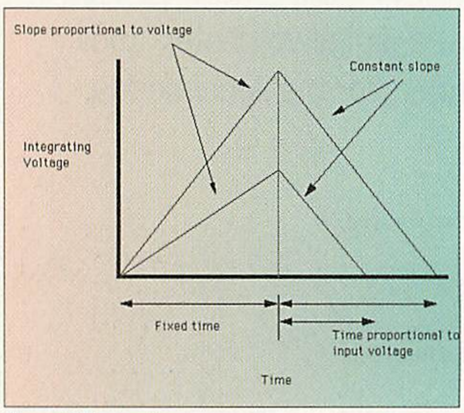


Figure 2: The Dual Ramp conversion system.

In OS 3.1 there is a parallel input mode. In essence a strobe pulse will cause an interrupt that reads the data on the input pins and places them into a buffer. All the programmer has to do is to treat this buffer just like a file. This support only exists for bi-directional printer ports which is why I have to restrict the project to these machines for the time being.

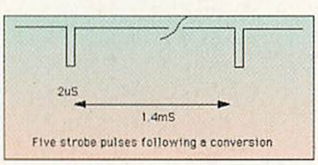
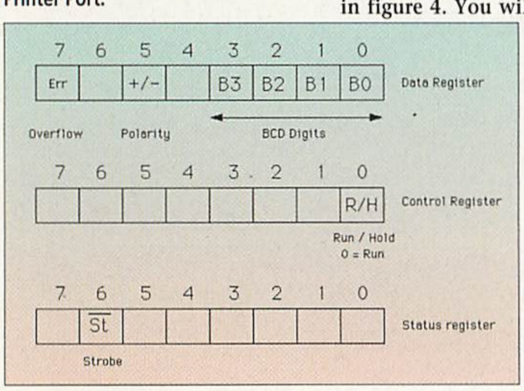


Figure 3: The strobe pulse from the DVM chips.

Software

As a simple example of using these input routines there is a simple BASIC program on the cover disc that will read the DVM and print out a voltage reading. By the way, don't run this if you do not have the hardware attached as the computer will hang waiting for a strobe pulse. The signals coming in on the printer port are shown in figure 4. You will see that the last four bits of the data register contain the digits we want; these change with each strobe pulse. With four and a half digits you get five strobe pulses and thus five bytes of data per reading.

Figure 4: The signals on the Printer Port.



Bits 7 and 5 contain the overrun and polarity flags and are the same on each of the five bytes. What the program does is to build up a string containing the voltage reading. First it looks at the polarity and the first digit and adds the decimal point, then the other four digits in turn. The way I have wired it up makes it easy to convert the BCD digit into an ASCII character; all you need to do is to clear all but the four least significant bits and then OR this with &30. At the end of all the bits I look for the overflow flag, this indicates that the input voltage was too high to measure, a message is output when that occurs. Incidentally you won't damage the DVM chip with a voltage that is too high unless it exceeds the 5 volts supply rail. If you are using it in situations where that might occur then you are best to put a protection diode on the input.

Using the DVM in BASIC is all very well but the current trend in computing is away from user programming and towards the Desktop. Therefore I have written a Desktop application: *DVM*. It checks for the presence of the DVM hardware and will not hang the computer if it is not there. When it is present it shows the readings in a mock seven-segment display style and also allows you to record the readings so that you can move them directly into a spreadsheet or graphing package.

You will see the small record button at the side of the window, but before you use it you will have to specify a file to hold the results which can be done in the normal way by dragging an icon from the save box into a filing window. During recording you can press the pause button to stop readings being saved. To close the file you need to hit the halt button which is what the record button renames itself when it it pressed. Note that once you hit halt, the file is closed and you can't make any additions to it; you have to specify a new file with the save dialogue box before you can record again. This saves you accidentally recording over a set of readings.

You can also set the sample rate, however, any attempt to set it faster than 0.3 seconds will result in it being set to 0.3 seconds. As this is a multi-tasking Desktop application it can only take a sample when the computer passes control to it. To do this the application makes a note of the time of the last sample using the **TIME** variable and works out when the next sample needs to be taken. It is written in such a way that if some other application occupies the computer at that moment then the sample is taken as soon as possible. This is mainly a problem with fast sample times as operations like disc access and window dragging take all the computer's time and samples are likely to be missed or delayed. However, for long period sampling like every few minutes this should not be a problem. If you really want to be on the safe side then you should be doing nothing else on the computer when you are recording.

Although I am not into selling kits these days I do have some PCBs for this circuit and can provide them for £5.00 along with a list of all the components and their source. Cheques to Musbury Consultants, 5 Helmshore Rd. Haslingden, BB4 4BG.

Well now you can Run The RISC to accurately measure voltages and analyse them with any standard package; see you next month for something completely different. AU

Questions & Answers

GIFs for Web pages • High-density disc drives on early machines • Director problems on the cover disc • Backing up your hard disc • Connecting to the Internet over Ethernet

Q I'm designing a few Web pages and I've been looking at the *Acorn User* site. I notice that a lot of your graphics use interlaced GIFs and GIFs with transparent backgrounds – how do you do this?

James MacIntosh
Colne

A There are a couple of programs floating around that will create transparent GIFs, but only one that I am aware of that will create interlaced GIFs. This is *WebGif*, by Riscy Developments, and should be on every WebMaster's icon bar. This will take a GIF file and optionally interlace it and make the background transparent. It's a front-end to a freeware UNIX program, and works really well.

***WebGif* is freeware; for details of how to obtain it contact Ian Jeffray on (01635) 552571, or e-mail ian_jeffray @mentorg.com. It is also distributed with the commercial package *HTMLEdit* from R-Comp.**

GIF files are bitmap files in a format understood by most computers on the Internet. One colour in a GIF file can be designated transparent – if this is 20% grey the results look good on most browsers. Interlaced GIFs store the picture at progressively higher levels of detail, with most browsers building up the picture in passes as they go. Interlacing is useful for large GIFs and image maps, as the user can see a rough representation of the file without waiting for the whole image to download.

If you use *Creator* to produce your GIFs from sprite files, the GIFs will look scrambled on certain browsers because *Creator* puts incorrect header information in the file. *WebGif* restores the correct header information, so it is worth passing all your GIFs through *WebGif* even if they are going to be neither transparent nor interlaced.



Interlaced GIFs progressively build up higher levels of detail as they download.

Q We have an Archimedes A3000 computer that not long ago was upgraded to RISC OS 3. Wanting to format a disc and already being at the command line, I wondered if I could do it from where I was, so I typed:

```
*HELP FORMAT
```

The information it gave back included ADFS F format – 1600K. This caught my eye; could our machine really take high density discs? I checked our ADFS module, which turned out to be version 2.67, which according to the help is late enough to support F format discs. However, the F 1.6Mb floppy format isn't in our Desktop formatting menu.

So, can or can't our computer support high density? And if it *can*, why not put the F format in the Desktop menu?

Peter Martin
London

A Your version of ADFS (the one supplied with RISC OS 3) certainly can support high density discs, but the hardware in your computer can't. You may be able to get a replacement high density disc drive and controller from Beebug – (01727) 840303 – which would enable you to use high density discs in your drive.

ADFS checks whether your hardware is capable of supporting high density floppy discs, and only displays the high density format menu entries if it is.

Q I'm having a few problems with the *Director* program from the October *Acorn User* cover disc. Every time I load it I get the error message 'Bad parameters' – I have copied the program to my hard disc and tried to run it with the same result.

F J Cruickshank
Epsom

A This one took some tracking down. The error was reported by a number of people and didn't seem to be tied to any particular machine, version of RISC OS or configuration. Nick Craig-Wood, *Director's* author, has now found the problem:

'The problem is that there is an old copy of *IfThereIs* on the run path, typically in the *Library* directory. Delete this and *Director* will work; there is a newer copy in *Director*.'

If you have any trouble finding the copy of *IfThereIs*, don't forget that you can use the Find function of the Filer In RISC OS 3. Select a group of directories, choose Find from the Selection submenu and type:

```
IfThereIs
```

into the writable icon. Be careful *not* to delete the copy inside *Director*, though.

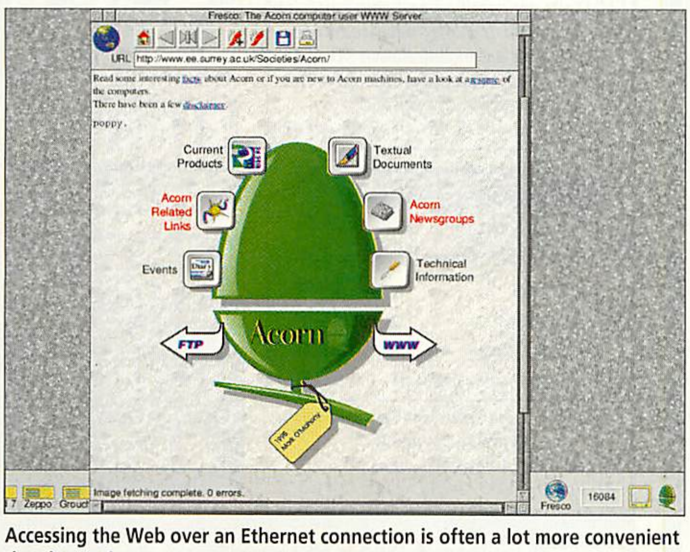
Q As a new subscriber, I am still finding my feet around RISC OS. My problem is that I need a cost-effective way of backing up my hard disc (420Mb IDE) fitted into an A440/1 with RISC OS 3.11 and 8Mb RAM. At present the low density floppy drive is awaiting replacement by a high density version, but this still seems like a bit of a pain for backing up what is at present 200Mb.

For reasons of cost, I have discounted buying the existing 2 and 4Gb tape streamers I have seen advertised in your magazine. Can you offer any alternatives?

Brian Yewdall
Leeds

A One product worth considering is the Panasonic dual CD-ROM and writable optical disc drive, sold by Cumana as the proTeus. Although this product is initially expensive, the 650Mb cartridges that come with it are, byte for byte, cheaper than just about any other removable storage medium.

To use the proTeus you would need to get a SCSI card, but it is likely that *whatever* storage medium you were to chose would need to operate via SCSI.



Accessing the Web over an Ethernet connection is often a lot more convenient than by modem.

You are unlikely to be able successfully to fit a second IDE drive inside an A440, or indeed any pre-A5000 computer. If you are not prepared to spend this amount of money, then backing up to floppy really is your best option – a high density drive will help enormously here.

If you do decide to back up your hard disc and you missed the *CLICBack* program on the cover of the September issue – this is the best hard disc backup utility that I know of – you can obtain a registered copy by sending £10 to Steve Spry, 36 Moreton Avenue, Bideford, North Devon EX39 3AY, along with a blank formatted disc. All proceeds from the sale of this program go to the Cancer and Leukaemia In Childhood Trust.

Q Your recent feature on packages to access the Internet concentrated on dial-up access – however, I can get a direct Ethernet connection from my University, including my own IP address. Is there software for the Archimedes that can take advantage of this?

P M Giles
Coventry

A Yes, there is. On the commercial front there is the *Ant Internet Suite*, costing £99 + VAT, which is an all-in one solution and relatively easy to set up. It offers drag-and-drop ftp, a fast Web browser called *Fresco* and access to POP3 and SMTP e-mail, though the POP3 support is a bit minimal at present. Naturally, you get better technical support from a commercial product, too.

The other commercial software is not really suitable for this purpose. *Termite Internet*, while excellent for dial-up, does not work with direct connections, and *Voyager* is tied to the Argo service provider. Acorn's own *InterTalk* should be suitable when it arrives, but things have gone very quiet on that front recently; perhaps this is one of Acorn's big announcements that it is to make at BETT.

There are Freeware and PD solutions, which are a little harder to set up. You will need a TCP/IP stack; Tom Hughes's *Freenet* stack does not (currently) work with DCI4 drivers supplied on the latest Ethernet cards; however Acorn's freely distributable *Internet* stack (in ROM on RISC OS 3.6) does work. The TCP/IP stack is the heart of the process – it doesn't itself do anything but allows other applications to 'talk' to the Internet via a standard interface.

This interface is the same for the *Freenet* stack as for the Acorn one, so software designed to run with *Freenet* can be used with the Acorn stack just as easily. This includes the *ArcWeb* Web browser, the *Freeterm* Telnet client, the *Freenews* newsreader and a command-line ftp client. Mail is a little more tricky, although there is now a Freeware POP mail reader – *POP* – which is a good deal more sophisticated than the current Ant one. A workable system can therefore be assembled from free software, although it does not come ready-configured.

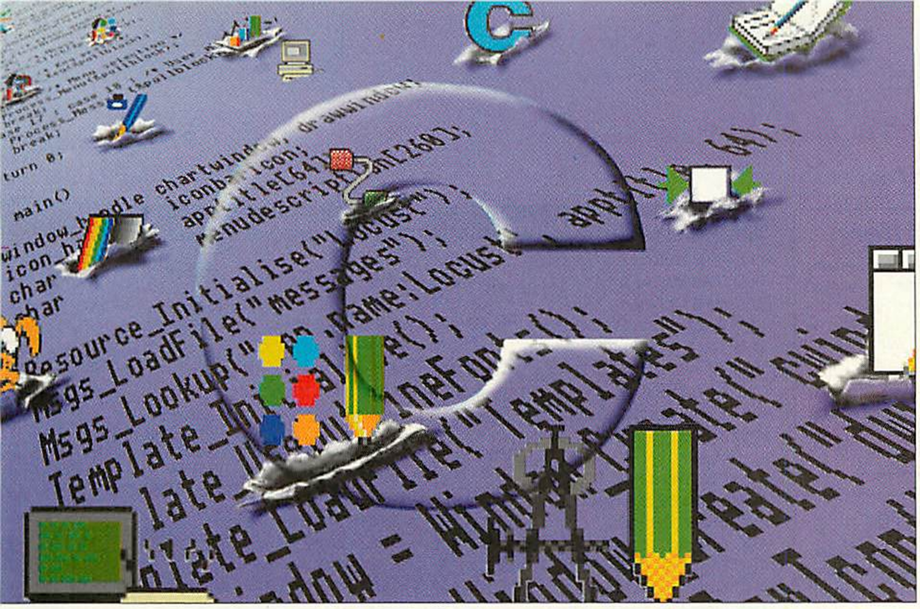
Details of how to configure the system are beyond these pages, but before you start, you will need to know:

- The IP address of your machine (for instance 194.159.126.31)
- The subnet mask for your network (for instance 255.255.255.0)
- The IP address of a default gateway to connect your local network to the Internet.
- The IP addresses of some name servers, which will translate domain names into IP addresses.
- Your own domain name (for instance dm.idg.co.uk – dm is in this case the *hostname*)

If you are handling news and e-mail then you will also need to know the domain names of news and mail servers. Your network administrator should be able to provide all this information.

Acorn's TCP/IP stack does not come with a built-in resolver. A resolver translates domain names like gate.demon.co.uk into IP addresses like 158.152.1.65 – if you don't have one you will have to use IP addresses exclusively which is awkward and makes Web browsing impossible.

Thankfully one – *InetDB* – is included with *ArcWeb* with instructions for installing it. A better version, *ResolverZM* is preferable if you can find it; I use this module in preference to Ant's on my system, but something on my network appears to give the *Ant Internet Suite* trouble when resolving, which is cured by using *ResolverZM*. AU



JACK KREINDLER

C for yourself

Steve Mumford creates a minimalist multi-tasking application

In the last couple of months we've been perusing some of the basic SWI commands we would need in order to create a basic multi-tasking program. When I say 'basic', that's precisely what I mean; as yet, we don't know how to include icons on the icon bar, open windows, or indeed do anything particularly useful. Still, that will change with time – for now, though, I'll lay out the minimum code required to start your program multi-tasking.

Back in December, I introduced two header files, *kernel.h* and *swis.h*. These contained the code necessary for calling the SWI functions from within C, and because these header files were provided by Acorn's C development kit as well as Beebug's *EasyC*, a program written using these calls compiles happily on both versions. Although this is quite desirable, there's a price to pay. If you've tried to make use of the functions, you might have discovered they're a mite tricky to control.

The problem arises when we have to convert the variables we're using in C into the format the SWI is expecting – the function **_kernel_swi()** makes use of structures to pass the register data back and forth, and each structure consists of an array of ten integers. However, when you examine the arguments that some of the SWI calls are looking for, it turns out that integers aren't the only thing they're after, and at first sight it can be unclear as to how you're actually supposed to pass the parameters to the call.

However, you don't have to worry unduly; just set up the data beforehand and use the casting operator in order to convert it to the correct type. For instance, to send the **Wimp_Initialise** call, the code might look something like this – taken from the example application on the cover disc:

```
_kernel_swi_regs regs_in, regs_out;
char appname[] = "Example";
long int msglist[1] = {0};
regs_in.r[0] = 310;
regs_in.r[1] = *(int *)"TASK";
regs_in.r[2] = (int) appname;
regs_in.r[3] = (int) msglist;
_kernel_swi(Wimp_Initialise, &regs_in,
&regs_out);
```

The first three lines declare the variables we will be using; the task name is stored in an array of characters and an array of integers is set up to hold a list of message numbers that our task is interested in, terminated by 0. However, at this stage we're interested in all of them, so giving 0 as the list's only value informs the **WIMP** that we should be notified whenever a message is passed.

Note that we can't just pass zero to the **SWI** – instead, we must pass a pointer to a list whose first member is zero. As an aside, it's impossible to mask out **Message_Quit** since it would be rather impractical if programs ignored any requests for them to quit.

Once our task has been initialised, we can then start the main poll loop – in this example application, it just listens out for messages by calling **Wimp_Poll** with a suitably-sized data block, although other conditions can be added by expanding the **switch{}** construction. I've used an array of characters for the data block; it's then possible to access any byte individually and reconstitute whole words by a simple procedure of adding and bit-shifting.

In the example, this is carried out by the function **btow()**. If a message is received, the function **wimpmsg()** is called which determines the message type, held in the word beginning at the address **pollblock+16**.

Again, the only message catered for is **Message_Quit**, but this is enough to allow the program to multitask – if you run the code and open up the Task Manager, you'll see the name of our application listed with all the others at the top. Clicking Menu over its name and selecting Quit will fire off the appropriate message and your program will terminate.

If you're using Acorn's C development kit, there's another way of calling **SWI** commands given in **swis.h**. Instead of passing the register contents in one amorphous block, you can make use of the **_swi()** function – its syntax is somewhat different to **_kernel_swi()**, but it's worth mentioning since it doesn't require you to set up any banks of variables beforehand. I've supplied an example program in this format so you can take a look for yourself. That's all for now; see you next time. AU

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Dave Lawrence and Dave Acton launch into a new selection of weird and wonderful programmettes

*info

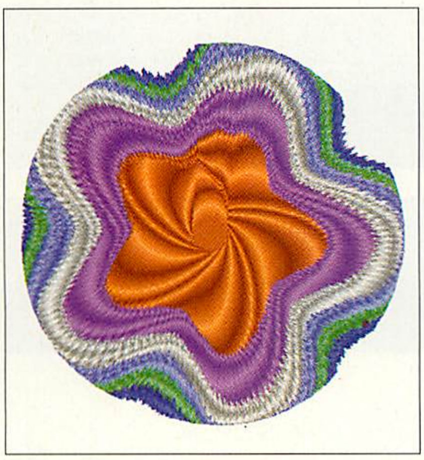
Water whirled

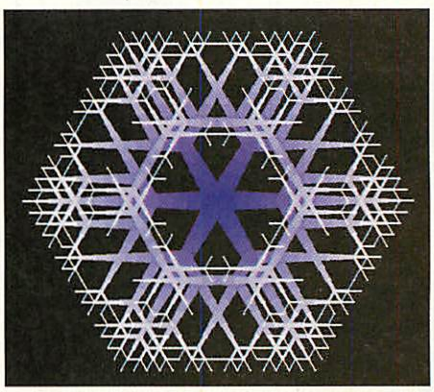
Author: Jan Vibe

In the Christmas issue, we introduced you to Jan Vibe's graphic conveyor belt and the mysterious **PROCL** which can scroll an arbitrary line segment about the screen. As we've come to expect from Jan, he says he's produced some strange graphic displays with this function, but can't find anything useful to use it for. To back up this claim, here's *MLines*, a kind of spirally, metally, flowery, er, thing, look, just run it ok? Also from Jan we have just the thing to help you forget about these long cold winter nights – a random, recursive snowflake. Sorry, when I said 'forget', I meant 'remind'. To round it all off is *Vortex*, over to Jan for his description:

'If you take a random dot pattern, and rotate a copy about 1 degree and plot it on top of the original pattern, you get concentric circles. If you change the size of the rotated pattern, you get spirals. This program demonstrates this by making the dot pattern as a spritemask. This makes it possible to change the colour of the pattern by plotting different colours on the sprite below the mask. The sprite is plotted and scaled 15 times with different shades of blue, which makes it resemble a vortex in water (I think).'

We think so too Jan.







Time piece

Author: Jonathan Amery

A good way to increase your chances of getting your name into *INFO is to write a code variable based utility. Jonathan Amery has done just this:

RealTimeHx defines a code variable which expresses the current state of the real time clock as a 10 digit number in Hexadecimal.

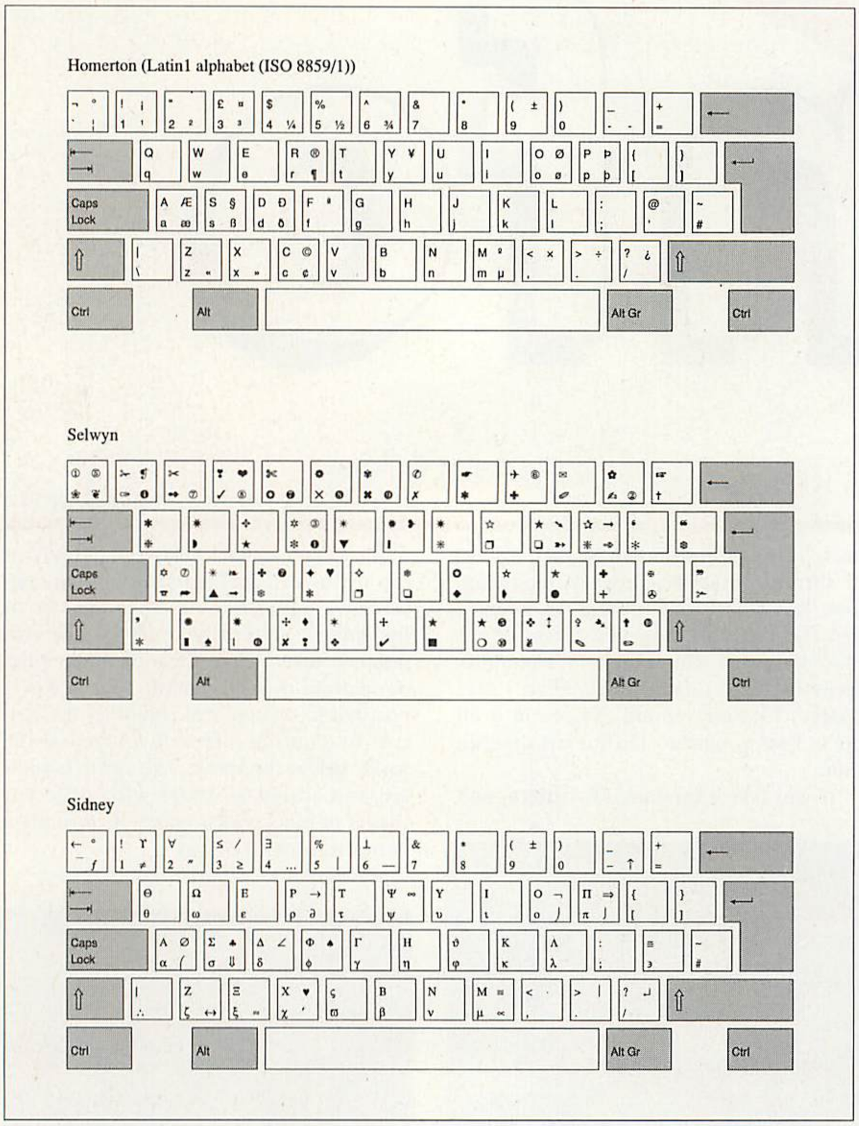
RealTimeHB sets the Print (F0) key up to a string which, if the key is pressed when a save box is up, saves the relevant file to the directory *<Untitled$Dir>* with a name which is the output from *RealTimeHx*. This is quite useful when you just need to save a file quickly and want to ensure it has a unique name, otherwise you end up with all your sprites called *SpriteFile* and your drawings called *DrawFile*.

The obey file *!Install* automatically runs both progs. Of course, you may want to edit this to always save these temporary files to your scrap directory or, in my case, the root directory. If they end up here then you always see them and might actually get round to sorting them out properly one day...

Pretty as a picture

Author: Jonathan Pretty

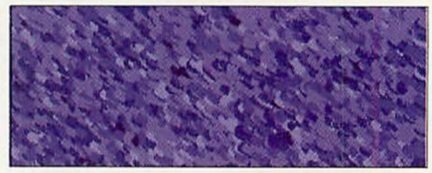
Jonathan Pretty of Alton in Hampshire has been busy with *Draw* and produced three excellent diagrams of the symbols available from the keyboard when using the *Alt* key. The first shows the standard Latin1 encoding used by most outline fonts. This can be found in the user guide supplied with your computer and is supplied for completeness. The other two diagrams show the Selwyn and Sidney fonts so you can see all the wonderful dingbats, Greek letters and mathematical symbols available to you. The actual *Draw* file is supplied on the cover disc if you wish to print out the layouts for yourself.



Backpack

Author: Graham Crockford

If you're fed up with Acorn's selection of grey backdrops, here's a set of four lively colourful ones from Graham Crockford – *Flob*, *Lava*, *Marble* and *Mucus*. Graham explains that they are actually all based on the original *NewLook* backdrops but have gone through something of a facelift with Henrik Bjeregaard Pedersen's *Process* appli-





cation. To install them to the backdrop simply double-click on their thumbnail-icons.

They are all 256 colour (Mode 15) sprites and so will therefore only be colourful in 256 colour desktop modes. Many 256 colour backdrops do not survive the translation to 16 colour modes, often collecting many bizarre cream and orange pixels on the way. These four do translate quite successfully to 16 colour, but do revert to plain greyscale images.





No point rushin'

Author: Jonathan Wells

Following Mr Thurlby's BASIC program for the Russian peasant method of long multiplication (*INFO, September 1995), Jonathan Wells – our third Jonathan in a row – has submitted an ARM implementation of the algorithm. If you missed the original feature, the principle is simple: write down the two numbers to multiply at the top of two columns and repeatedly halve the left hand number (ignoring remainders) and double the right.

When you reach '1', stop, add up all the numbers in the right hand column corresponding to *odd* numbers in the left hand column and the result is the product of the two original numbers. Obviously this is very handy for keeping track of your potatoes and vodka rations out on the steppes.

Jonathan says that he was inspired to write the routine after reading an article in a PC magazine and thought it would be a useful exercise in learning ARM code. The program is fully commented and should be self explanatory for even the most novice of ARM hackers. He also freely admits that the task is effectively pointless as the ARM chip has a perfectly good multiply instruction. True, but as first pointed out, as an exercise it is a good one. It is also quite useful to know the principle behind a good multiply routine in case you ever find yourself having to program a simpler processor, 6502 code anyone?

Easy-PC

Author: Mr R J Cohn

Two quickies from Mr R J Cohn (he doesn't reveal if his middle name is Jonathan or not) of Oxford for users of PC cards. First up is *DOSFSMaps* which should be copied to *Choices.Boot.Predesk.* This is a list containing 70-odd mappings between DOS-style file name extensions (e.g. .TXT) and RISC OS file types. If you regularly move files between operating systems, you'll find this quite handy.

Second from Mr Cohn is a RISC OS palette that has been set up with PC colours. With this you can grab parts of the Windows screen in 256 colour modes and translate them to sixteen colour sprites. Start by creating a 16 colour sprite of the correct size in *Paint* then drop the palette file *16ColPC* onto the sprite to set the sprite's palette. Ensure your grabbed sprite is loaded into paint, show the toolbox and select the 'Use Sprite as Brush' tool. Enter the name of the grabbed sprite and make sure the 'Shape' box is not selected; you can now paint with this sprite. With a little bit of careful mouse work you should be able to position it entirely on top of your 16 colour sprite. Alternatively create the sprite larger than the original and use the 'Adjust Size' dialogue box to trim the edges afterwards.

Reaction time

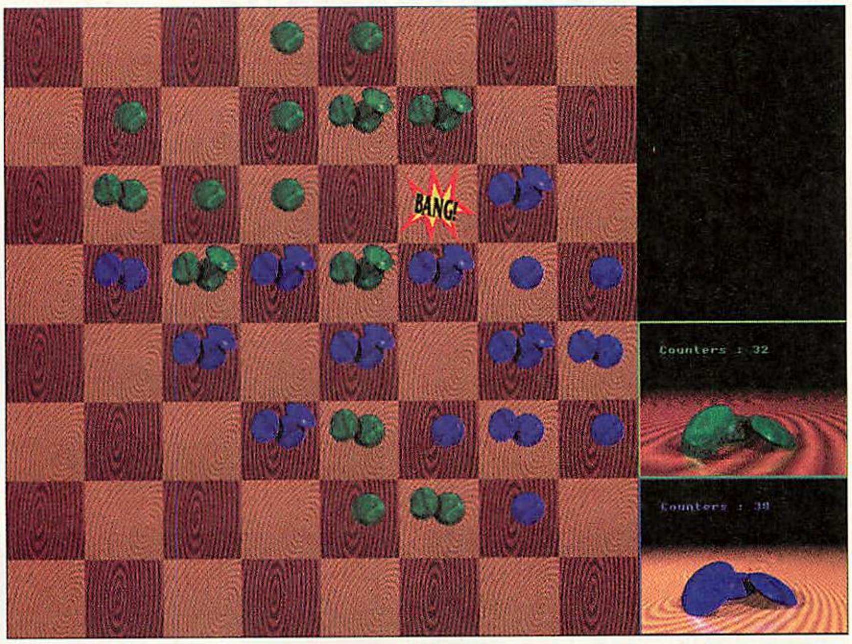
Author: Phil Norman

This is a particularly swish looking version of those atomic reaction games which seem to have been around forever. It comes from Phil Norman and is a Risc PC-only application.

Select the number of players from the start screen (and adjust the volume too, if you have a mind to). Then click on the play icon to begin.

Players take turn in placing counters on the board. You can place a counter in a blank square, or add one to a square that already contains one or more of your own counters. When the number of counters in a square reaches the critical value of 4, the square explodes sending a counter in each direction. These change the colours of the counters in adjacent squares to your own.

If a square receiving a counter from an explosion has already got three counters in, it too becomes critical and explodes. In this way, a chain reaction is started and pretty soon, if you're cunning enough, the placing of a single counter might lead to world (well, screen) domination. The winner is clearly the one to change all counters to their own colour.



If all this atomic jiggery-pokery has a familiar ring, dig out your old copies of *Acorn User*. The game first appeared as Adrian St John's *Atoms* in Risc Revue. It was upgraded to computer play by L C Howe and a Desktop version came courtesy of Niall Douglas. If anyone would like to incorporate these enhancements (especially computer-play) in Phil's game, we would like to see the results.

Hide and seek

Author: Justin Fletcher

Even if you have a ten thousand pixel square Desktop running on some Eizo monitor the size of a bungalow, there inevitably comes a time when the icon bar becomes lost under a sea of windows. True enough, you can click on Shift F12 to bring it to the front, but that's the easy way out. Justin Fletcher has been raking around the PRMs and has discovered an unused configuration bit which holds the key to another way of keeping your icon bar free of clutter.

The bit in question is NoObscureIconBar. You would never guess from the cryptic name, but this (unimplemented) configuration bit – bit 4 of CMOS byte 28 in fact – was included to allow the possibility of forcing window opens to leave the icon bar uncovered. We have provided a simple little BASIC program called *SetBit* to set or clear the bit in question – Justin does the clever stuff with a module to make use of the new configuration option.

Just click on *!NoCover* to install. 'Basically, it just patches the **Wimp_OpenWindow** call to modify its parameters using Andrew Clover's WimpSWIve module,' Justin explains. 'The bottom of the window is limited to just above the iconbar unless Shift is pressed, the CMOS bit is unset, there is no adjust size or vertical scroll bar, or the title bar is below the iconbar top. The toolsprites are taken into account by using **Wimp_GetWindowInfo** and **Wimp_GetWindowOutline** (unlike many programs).

'A small patch is used to ensure that if you click on full size, you get full size, as otherwise the window only opens downwards to the iconbar and stops. This is peculiar, but that is what the WIMP does, so I had to work around it.

'If you do click on the toggle icon, then the maximum height is found, and the top extended by that amount. Then it is clipped to the screen, also taking into account the tool icons. Try it using the Mega set created by Edouard Poor and see the effect.'

The source is provided – click on *!Create* to make the module. Normally, holding down Shift overrules the NoObscure bit and allows windows to cover the icon bar. When making the module however, you have the option of setting up Ctrl-Shift to cancel this effect – bypassing the bypass. This is apparently necessary because some application like *Zap* (in which Shift-Ctrl-G sets a window to full size) may be otherwise confused.

Seeing stars

Author: David Llewellyn Jones

Two doodles for all machines here from David Llewellyn-Jones, aka *The Flying Pig*.

StarShine creates, according to the author, 'a computer Tinkerbell'. The effect is much the same as you would get waving a sparkler about, assuming you could do so along well-defined sinusoidal paths. In fact, the demo is interactive. You can leave it to do its own thing, or use the mouse and Select to twirl your own sparkler alongside the computer-controlled one. Press Adjust to play alone.



Mole works along similar lines. No control over this one, nor any particular clue as to why it's called *Mole* – it's not warm and furry, although your might be left with less than perfect eyesight if you stare at it too long. Of course, the same goes for playing with your sparkler too much.



Worms and waterfalls

Authors: Darren Northcott and Daniel Mossop

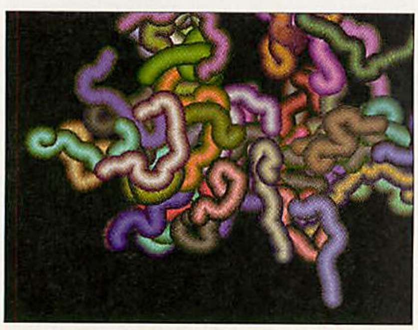
Although we constantly strive to provide upgrades to previous submissions in *INFO, occasionally we have requests for downgrades too.

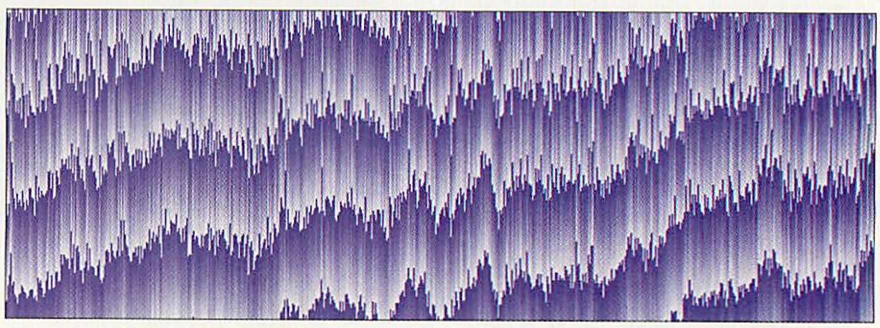
Darren Northcott was impressed by our wormy Risc PC-only demo *Nematode* (October 1995) but clearly not by the fact that it wouldn't run on earlier machines. With a bit of twiddling he came up with *Nematode2* and *Nematode3*. These work in mode 122 (or mode 21) so you will still need a multi-sync monitor. However, the **GCOL r,g,b** command has been replaced by a more suitable ColourTrans call and although there are only 256 colours available, the overall effect is still very pleasing, in a maggoty kind of way. Incidentally, *Nematode3* differs from its earlier counterpart in that it runs a good bit quicker.



Also featured in Downgrade Corner this month is *SpiMetal2* – Daniel Mossop's version of Phil Norman's Risc PC demo. This one will work on just about everything, making using of good old mode 12. Again, a ColourTrans call is used to dither as best we can and in fact the shading is pretty good considering the drop in the number of colours available.

Finally, not a downgrade but an original – *Cataract*, also by Daniel, is another mode 12 faithful. A cascading waterfall is built up column by column and that evergreen trick of palette-cycling provides the stunning watery effects. An aquatic mantelpiece. I mean masterpiece.





*QUIT

All of your programs, large or small, hints, tips or what have you are most welcome. Send them to:

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You needn't include a letter but do please put your name, address and program title on every disc and include a text file containing at least your name, address, disc contents and program details. An SAE will ensure your discs are returned and any other instructions, diagrams, saved screens etc are appreciated.

Compatibility table

Software	RISC OS 2	RISC OS3.1	RISC OS 3.5/3.6
RealTime	Yes	Yes	Yes
DOSFSMaps	No	Yes	Yes
Backdrops	No	Yes	Yes
NoCover	No	Yes	Yes
StarShine/Mole	Yes	Yes	Yes
PCKeys	No	Yes	Yes
Cataract	Yes	Yes	Yes
SpinMetal2	No	Yes	Yes
Reaction	No	No	Yes
Nematode	No	Yes	Yes
MLines	Yes	Yes	Yes
Snowflake/Vortex	No	Yes	Yes
Russian	Yes	Yes	Yes

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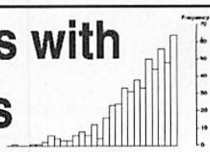
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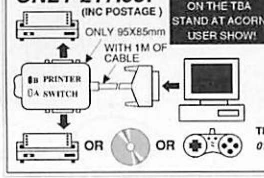
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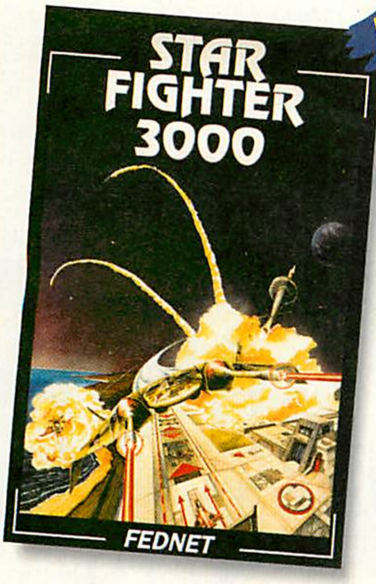
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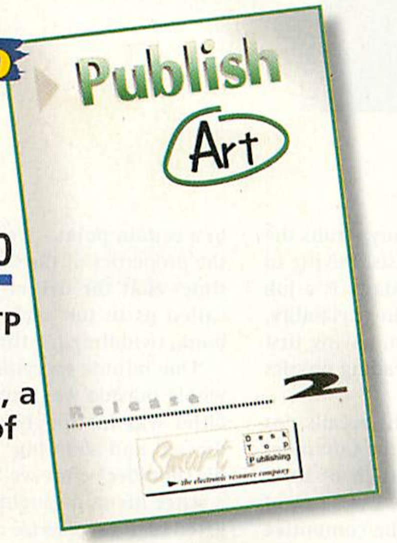
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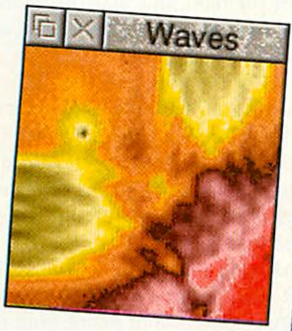
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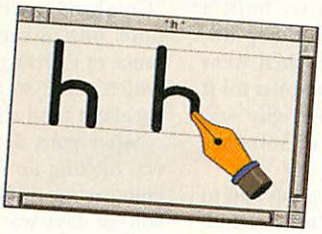
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The Regan files

Chris Cox


REGAN

Chris Cox – Uncle Anorak to many – runs the Clan, Acorn's club for enthusiasts. Having to answer to the demands of enthusiasts is a job second only to Customer Support in enviability, but Chris can empathise with them, having first got into computing when he was reading physics at Magdalene College, Cambridge.

'I date back to the BBC days,' he recalls. 'At Cambridge 15 years ago there was the Computer Society and then there was a bunch of total anoraks called the Processor Group; I was one of them. I even ended up being on the committee by the time I left.

'At the time there was a previous generation of students that were just on their way out and they really frowned on us because we used microprocessors and they had done all their stuff in bit-slice. Then the generation after us all bought *computers* which we thought was tremendously pathetic, because three of us had actually built our own machines up from scratch. We started off with binary switches and LEDs to get data into memory; literally we did it with no operating system. That's where my heritage comes from.

'We did build up to using keyboards and seven-segment LED displays, then we built a monitor and actually wrote memory dump display software. One of the other guys then went off and just casually knocked up a compiler for it in his spare time ... as one does. The guy was William Stoye who became head of software skills at Acorn.'

'I was once on an oil rig which blew up'

After the hedonism of student life a job had to be found; Chris noticed one in the 'milk round' that seemed to pay about three times as much as other jobs. He soon found out why; it meant being on call 24 hours a day, as he was working for Schlumberger on oil rigs.

'I was once on an oil rig which blew up. The rigs I was working on were mobile and floated; therefore the drill bit itself was mounted using a compressed air system. I worked as part of a team which were called in when drilling had got to a certain point – we went in and measured all the properties of the bore hole. It was one of the times that the drillers had got optimistic and called us in too early, so I was sitting on my bunk, twiddling my thumbs near a porthole.

'One minute everything was fine, the next the whole outside was engulfed in flames. My crew chief was in the shower at the time, he was dressed and shouting "Don't wait for me" over his shoulder before we had even moved.'

After life as a roughneck, Chris sold and marketed oscilloscopes for a London-based company. While there, he came up with a foolproof plan; he sold his house when he believed that house prices were about to stop rising and was going to rent until they had fallen.

'Unfortunately I had kids and a cat. The number of landlords that will let you rent with children is minimal, and the number that take pets as well is zero. Then my wife phoned me saying that she had found the perfect house – but it was for sale not for rent, and that the owners were going to sell to someone else if we did not put in an offer.

'I wasn't sure, so she told me that it was within walking distance of five pubs and I said "Go ahead" without even seeing it.' (Author's note: one of the five pubs within walking distance of Chris's new house is The Boot at Histon, which gets 5 stars in the Regan pub guide for its excellent food and real log fire.)

'After years of driving up and down the M11 I was looking for a change when I noticed this job going at Acorn. My recollection of Acorn from my college days was of a little company behind the cinema in Market Square in Cambridge (now M&S) where we went to try to buy a keyboard. The place was complete chaos – they were cutting the tops of chips to look at the silicon because they needed to find out why the chip was not working. I didn't realise when I applied that the company had now moved to Histon – five minutes' walk away from where I was now living.'

Jill Regan AU

REMOVABLE HARDDRIVE SYSTEM



* TOTAL DATA SECURITY
* EASY DATA TRANSFER BETWEEN COMPUTERS
* IDEAL HARDDISC BACKUP

The removable harddrive system fits into a 5¼" drive slot in the RiscPC and harddrives are available in many sizes which can simply plug in and out of the slot as required. The drive may be locked in place to prevent unauthorized removal. For total security the drive may be removed and stored in a safe place to prevent unauthorized access to your data. Because the removable drives are available in any size (up to at least 1Gb) they are also ideal for use as backups for existing harddrives, and may be easily transported between different computers for rapid transfer of large datafiles. The system is available for use with both IDE and SCSI filing systems.

External boxes are available to enable SCSI removable drives to be used with older Acorn models. Please 'phone for details.

IDE systems

Mounting Kit for IDE systems £25.00
Plug in IDE drives:- 850Mb £198.00 1.0Gb £244.00

SCSI systems

Mounting Kit for SCSI systems £29.00
Plug in SCSI drives:- 730Mb £246 1.0Gb £345 2Gb £679

PAL TV CODERS



PLC/3

Price £104.57 inc vat

There are now two coders in our range which cover all Acorn computer models and allow Computer output in virtually all screen modes to be converted to a PAL TV signal suitable for recording to a video recorder or displaying on any TV with a Video input socket.

The PLC/3 is our standard model which works in any of the 'standard TV' modes (eg modes 12 & 15) on all Acorn computer models. (Note that the AKF60 & AKF85 monitors will not work in these modes, although the PLC/3 will still produce a TV output with the RiscPC). The PLC/3 has a 15 pin RGB output for the monitor, a BNC for video and an S-VHS socket for S-Video.



AVK/3

Price £355.00 inc vat

A new addition to the range - the AVK/3 will work with all computer models in all screen modes up to 800 x 600 resolution in 16 million colours. It has a remote control with facilities for zooming, freezing & panning the TV picture. Ideal for lectures and demonstrations etc. The AVK/3 includes all connecting cables including a SCART which gives TV frequency RGB O/P for large screen TV's, a phono socket for composite video and an S-VHS socket for S-Video.

Note:-Older Acorn Computer models may have 9 pin monitor sockets. 9 to 15pin & 15 to 9 pin converters are available at £4.11 each.

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The Orange system provides various tariffs from as little as £15.00 per month inc 15mins FREE calls

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SCSI Cards

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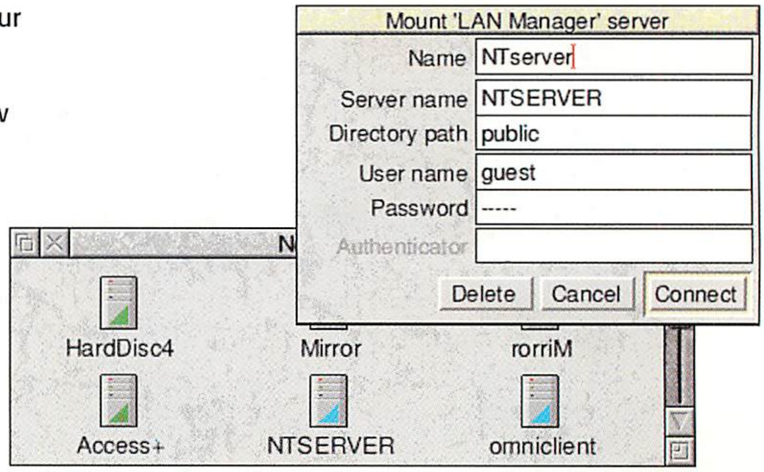
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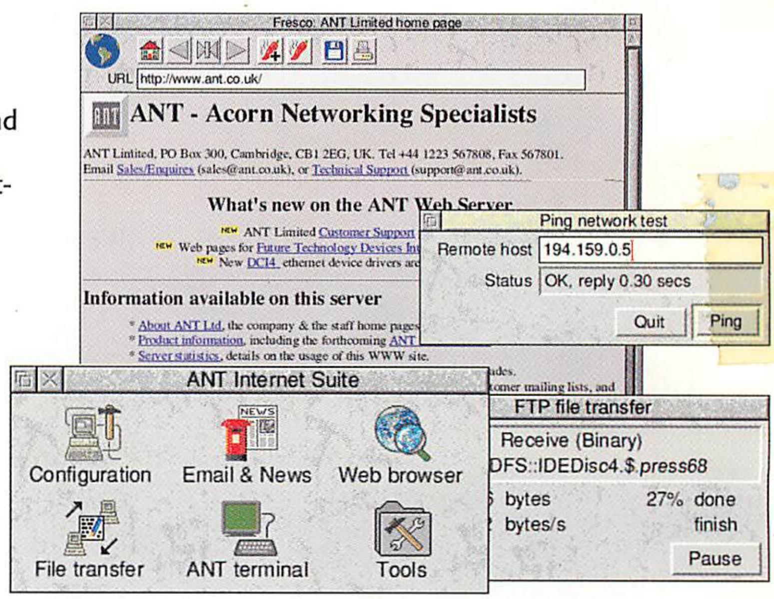
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